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NOVEMBER
1923

VETERINARY MEDICINE

1827 SOUTH WABASH AVENUE, CHICAGO

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VOL. XVIII No. 11

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VETERINARY MEDICINE

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Veterinary Medicine

VOL. XVIII NOVEMBER, 1923 No. 11

Editorial

Let's Stare the Facts in the Face

IN an open letter to a farm adviser, Dean Giltner of the veterinary department of the Michigan agricultural college, points out the significant fact that despite the greatness of this country as an agricultural nation, the number of veterinary students attending the veterinary courses are decreasing. The decrease has been more than 80% since the war, he says. Other reports show that in spite of an unusual effort on the part of the deans to bring the veterinary profession into greater prominence during the past months, the number of freshmen matriculated this year is lower than ever before.

In the face of our growing live stock industry and the prosperity of the people in general this situation is a remarkable one to say the least. It is a situation that can no longer be waived aside nonchalantly with the orthodox explanation of supply and demand, but one needing a more thoughtful and more profound consideration by the combined interests concerned in the safety and the development of our investment in domestic animals.

The sense of security we have tried to nurse is dangerous—dangerous to us as in instituted profession and dangerous to some billions of invested capital.

We seem to be awaiting a turning point, a corrective climax, that may never arrive to set things right, and are surely drifting to an uncertain destination, pinning our faith in the law of supply and demand when in fact this law may not begin to operate and come to our rescue until too late to salvage the wreckage.

Admitted that it is easier to criticise than to correct faults, it may however be pardonable to expose thoughts for a new departure that might be helpful.

Deception Hurtful

As we see the situation, we have been trying to lure the high-school boy into the universities with promises which do not hold water, and thus fail in the luring. We tell of the great future of the veterinary profession only to have it pointed out by the local practitioner that farmer vaccination of swine, state medicine and other intrusions are making practice less inviting; we point out to prospective matriculants that a veterinary education leads to many salaried positions, only to have them find out that a veterinary inspector of the federal bureau of animal industry is hardly paid a living wage, and that the student of the agricultural course may become a farm adviser at $6,000 a year while the veterinary student becomes a county veterinarian at $2,500 or less; and we refer to the appointments as state veterinarians, municipal food inspectors, and professors, none of whom receive salaries commensurate with the importance of the offices nor the high qualifications required to fill them with credit.

In other words, we are angling without good bait and the recruits are not biting.

What Is The Remedy?

The remedy imposing itself seems to be that of making the bait more attractive. That is to say, we must tackle the trouble at its source; secure adequate compensation for government employees and other officials, and better conditions for the practitioner, before we can hope to be very successful with any program to enlarge the attendance, and as an encouragement to this promotional work we must first assume the congressmen, the legislators, the live stock commissioners, the governors of states, and the presidents of agricultural colleges and universities, can be convinced of the stultifying influence of the low value they place upon veterinary service.

At this moment, which must be acknowledged is a moment of anxiety, there is no concerted movement of importance in operation

anywhere to correct these fundamental faults of our vocation; there is no organized force of sufficient influence exerting itself in our behalf at the places where corrective measures must orginate.

Obviously those who fix the compensation of our official personnel and those who have the power to control intrusions upon the practitioner do not apprehend the situation; and it is equally obvious that we have failed to unfold its hazards to them, and until we do (not as individuals but as a profession having no apologies to make as to its achievements), it is the present writer's belief that the vacant chairs in the class rooms of the veterinary colleges will increase in number and an appalling quackery may replace the splendid service that has characterized veterinary history in the United States.

OTHER VIEWS

In an address made before the Illinois university conference for veterinarians, Dean White of the veterinary department of the Ohio state university said, "I have never felt alarmed at what the quacks, fakers, and their like would do to us as a profession. They are to me as inocuous as the red man of the sagebrush and cactus would be should he attempt to recapture his lost hunting grounds."

A Subscriber Writes:

"The outstanding fact that our animal population is remarkably free from plagues is not an accident. The veterinary profession of this country has made good. It has made good on every count, and sooner or later, its achievements will be appreciated. Although, just now the hand that proffers is being bitten, merit in the end will be rewarded. So, let us bind up our wounds and forge on."

WOMEN'S NATIONAL ORGANIZATIONS PROMOTE THE USE OF MILK

One of the encouraging events of the recent dairy congress held at Washington, Philadelphia, and Syracuse was the great interest taken in the movement to increase the consumption of milk as a food for children. Promotional programs were carried out by the American Child Hygiene association, American Dietetic association, Home Economics association, Child Health Organization of America, National Child Health council, and the American Red Cross.

Prominent American and foreign hygienists and dieticians represented discussed the importance of encouraging a greater consumption of milk and milk products with a seriousness which points to better returns for the milk industry as well as to prospects of a better future; and incidentally suggest to the American Veterinary Medical association the wisdom of projecting itself into this formidable and nation-wide enterprise.

JOIN THE HORSE ASSOCIATION

"Motor truck manufacturers have agents in every city, town, and village," says Secretary Dinsmore of the Horse Association.

"Salesmen, lured by fat commissions, are harassing horse owners. Literature from truck companies flows in a never ending stream to all prospects. Every 16 year old boy can drive a car or an alleged car; delivery clerks and many drivers want to use a motor truck, rather than a horse and wagon, because there are no chores to do. Sanitary regulations are often used to oppress stable owners, especially in old stables."

"All this must be met. It takes time and money to get the facts and to provide constant publication and distribution of convincing material. We have no apologies to offer for what we have accomplished, but **we do want every member to realize that we are in a desperate fight between horse use and motor truck use in cities.** Truck manufacturers are willing to spend enormous sums to gain this market, for it means continued sales for replacement. Even if they make no profit on their first sales,—because of heavy promotion cost,—they expect and intend to make it up in the future."

To meet their campaign, which is increasing in intensity, the association must have more money to work with, and that you give all possible help to that end. You can do this by joining the association, and lining up others you know ought to be in for as many shares as he should take.

The automobile has not displaced as many horses as the interests promoting the automotive industry would have you believe. The grand total of horses and mules in the United States for 1923 is 24,359,000 head, which is only 200,000 fewer than in 1900. Computed at the low price of say $50.00 each, this represents an investment of $1,117,950,000.00.

Transcript of a Milk Ordinance for Municipalities

The following article is a transcript of a milk ordinance suitable for municipal governments, and is recommended to city authorities as being constitutional by the attorney general of Illinois. It is reprinted below for the information of many inquirers who desire information as to the provisions such an ordinance should contain. The public in general and many health boards are becoming awake to the needs of enacting laws better to protect consumers against the careless practices that have prevailed among some milk producers and as a consequence usually consult with the local veterinarians as to ground such ordinances should cover. The movement in this direction is so widespread that many of our readers have been seeking information in detail which we could not supply in any other way than by placing a sample of such an ordinance on record in one of our issues where inquirers may thereafter be referred.

The "Illinois" ordinance is selected for this purpose because we know it to have been studied and passed on as to its constitutionality in that state, and which we believe assures it against any provisions illegal in any commonwealth in this country.

PROPOSED ORDINANCE AND EXPLANATORY NOTES

Sec. 1. Be it ordained by the.....city of.....that no person shall engage in the sale, delivery or distribution of milk within the city of.....without a license therefor as hereinafter provided. For the purpose of this ordinance, the word person shall mean individual, firm, partnership, or corporation. "Milk" shall include skimmed milk, sour milk, buttermilk and cream. This ordinance shall be construed as applying severally to the different classes of persons licensed hereunder. The fact that any section or part of a section of this ordinance shall be declared invalid shall not be held to invalidate any other portion of this ordinance.

Sec. 2. Persons desiring to engage in such business within the city of.....shall make written application to the City or Village Board of Health, or other legally qualified health authority, who shall have power to issue license upon satisfactory proof that applicant is entitled to same. The annual fees for the various licenses shall be for engaging in the business of the sale, delivery and distribution of milk, the sum of ....dollars for each wagon, or other vehicle; for retail business where milk is sold or kept for sale, the sum of.....dollars; for wholesale business where milk is sold or kept for sale, the sum of.....dollars; for the dealer who both produces milk and distributes it in the community from the wagon, the sum of.....dollars per wagon.

Sec. 3. The Board of Health is hereby invested with the power to make rules and regulations regarding the application for licenses, the issuance and revocation thereof wherever these rules and regulations on this ordinance may be violated, and to make suitable regulations governing the sanitary conditions under which the milk is produced, transported, stored and handled. The Health Officer or Health Commissioner, or other representative of the Board of Health, shall have authority to enter at all reasonable hours and inspect all places where milk is kept, transported or produced.

Sec. 4. Milk is the whole, fresh, clean lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and five days after calving or such longer period as may be necessary to render the milk practically colostrum free, and shall conform to the State Dairy Law in regard to milk fats and solids not fat.

All skimmed milk, buttermilk and cream shall conform to the standards fixed in the State Dairy Law

It shall be unlawful under this ordinance for anyone to sell, offer for sale, or have in his possession with intent to sell, any milk not conforming to such standards.

Sec. 5. No milk except skimmed milk, buttermilk or sour milk, shall be peddled or sold at retail in quantities less than one gallon except in containers bearing the true name of the article, the name and address of the producer, dealer or distributor, and the net volume of the contents, in accordance with the Illinois Dairy and Food Law.

No person shall sell milk in any bottle or container other than those bearing the seller's name or to which he has acquired title as required by the Illinois Dairy and Food Law.

Sec. 6. It shall be unlawful to sell any milk containing any artificial color or preservative or to which water or any foreign substance has been added or which has been handled or transported in unclean or unsanitary vessels or containers.

Sec. 7. All raw milk offered for sale, exposed for sale or kept for sale or distribution to the consumer as raw milk in the city of.....shall be derived from animals, proven healthy by veterinarian examination and free from tuberculosis; shall not contain more than 100,000 bacteria per cubic centimeter, nor any pathogenic bacteria, and shall be produced under the following conditions:

All persons living upon farms where such milk is produced, or employed thereon, and all persons handling or in contact with the milk in dairies or other places, shall be free from contagious or infectious diseases, and shall not have been exposed to any persons having a contagious disease.

No person who is a typhoid, paratyphoid, diphtheria or septic sore throat carrier shall be employed in the production of or handling of such milk.

It shall be the duty of every person, firm or corporation with the knowledge of the facts to notify the Board of Health or other legally qualified authorities at once by telephone or otherwise of the occurrence of any sickness in any person or persons living or employed in any place where milk is produced, handled or sold. Milk and milk derivatives which have been exposed to contagion or which is suspected of having been so exposed, shall not be shipped into or sold in .....city, unless the consent of the Board of Health or other legally qualified authority has been secured.

All raw milk shall be plainly marked on each bottle or other container with the words "Raw Milk" plainly printed.

Certified Milk is hereby defined as milk produced under special requirements and conforming to special standards known as "Standards for certified milk."

Sec. 8. Pasteurization is hereby defined as a process by which milk is heated to a temperature of 142° to 145° Fahrenheit and held at this temperature for a period of not less than thirty minutes. Pasteurized or raw milk shall be promptly cooled to a temperature of 50° Fahrenheit or below and shall be held at or below 60° Fahrenheit until delivered to the consumer.

There shall be attached to each milk pasteurizing machine an automatic recording device by which the temperature of the milk and the length of time heated shall be recorded upon a chart. These charts shall be available for inspection by the Health Officer.

All pasteurized milk shall be plainly marked on each bottle or other container, the word "pasteurized" in conjunction with the word "milk," cream, buttermilk, or "skimmed milk" as the case may be.

Sec. 9. No milk shall be sold in the city of .....which has not been pasteurized according to Section 8 of this Ordinance, except raw milk as provided for in Section 7 of this Ordinance, and certified milk when an ordinance governing its production and sale has been adopted and is being enforced.

Pasteurized milk shall have a bacterial count of not more than 1,000,000 bacteria before pasteurization and not more than 100,000 bacteria per cubic centimeter when deliverd to the consumer, and shall remain in a sweet condition for forty-eight hours at a temperature of 50° Fahrenheit.

No milk shall be sold that has more than a perceptible amount of sediment or stain other than that of natural butter fat when one pint is run through a cotton disc one inch in diameter.

No milk shall be put into bottles except those which have been subjected to boiling water or live steam or other approved methods sufficient to destroy pathogenic bacteria.

Whenever an emergency due to contagious disease arises in.....the Board of Health or other legally qualified health authority is hereby empowered to order and require that any or all milk sold or consumed therein shall be pasteurized in accordance with the provisions of Sections 8 and 9, until such time as said authority shall have determined that the emergency has passed.

Sec. 10. Any person licensed under the ordinance who receives from any other person, any fresh milk in cans, bottles, or containers of any kind shall cause the said cans, bottles or other containers to be emptied before the said milk contained therein shall become sour, and shall cause said cans, bottles or other containers to be immediately washed and thoroughly cleaned and aired.

When a communicable disease appears on premises where milk is produced, handled or sold, the sale, exchange, removal or distribution in any manner whatsoever, of milk, cream or milk products found, produced or handled, on such premises is strictly prohibited, until quarantine has been terminated and the premises and contents thereof, including all milk utensils have been disinfected under the supervision of the local health authority, provided that in the event of a communicable disease occurring on a dairy farm, the local health authority or the Illinois Department of Public Health may grant permission for the removal of the dairy cattle to other premises. When milch cows are so removed they may be milked and the products may be sold, provided, that neither persons nor utensils from the quarantined premises are employed in the milking or in the handling of the milk.

Milk may be delivered at quarantined premises, provided that there is no contact of any kind between inmates and contents of the quarantined premises and the delivery agent.

The householder may place a thoroughly clean container (a freshly scalded bottle or pail) to receive the milk at some convenient place outside the house out of reach of dogs or cats. The milkman shall then place the milk therein without handling the receiving container. No milk bottle, basket or any other article whatsoever, shall be taken out of or away from the quarantined premises during the period of quarantine. Before milk bottles are removed from the premises after quarantine is raised, they must be sterilized by boiling under the direction of the local health authority.

Sec. 11. Every building, room, basement, enclosure or premises occupied, used or maintained as a dairy or milk depot or any place where milk is bottled, handled or sold shall be properly and adequately lighted, drained, plumbed and ventilated, and shall be conducted with strict regard to the influence of such conditions upon the health of the operatives, employees, clerks, or other persons therein employed, and the purity and wholesomeness of the milk therein produced, prepared, manufactured, packed, stored, sold or distributed. No such place shall employ any operative, clerk or other employee who has a communicable disease or who is a "carrier" of such disease. Persons who have previously had typhoid or paratyphoid fever must show to the satisfaction of the health authorities that they are not carriers of typhoid or paratyphoid bacilli.

Sec. 12. Any person who shall engage in the wholesale or retail milk business shall have each vehicle from which milk is vended conspicuously marked with the name and address of the vender on both sides of the vehicle and shall have attached to the vehicle the license tag issued for the purpose by the Board of Health.

All vehicles in which milk is transported must be kept in a clean and sanitary condition and no bottling shall be done in transit.

Sec. 13. When it appears from the record that this ordinance has been violated the Board of Health or other legally qualified authority shall cause notice of such fact to be given to the party or parties concerned, the party or parties so notified shall be given an opportunity to be heard; notice shall specify the date, hour and place of the hearing; the hearing shall be private. If after such hearing the Board of Health or other legally qualified authority shall believe this ordinance has been violated, he shall cause the party or parties concerned to be prosecuted.

Whoever shall violate any of the provisions of this ordinance shall be punished by a fine of not less than .....dollars for the first offense or the revocation of his license for not less than..... days, and for the second offense the sum of..... dollars or the revocation of his license.

ORDINANCE IS LEGAL AND CONSTITUTIONAL

In answer to a request concerning the legality and constitutionality of the above ordinance the Attorney General of Illinois wrote, on August 24, 1922, the letter quoted below:

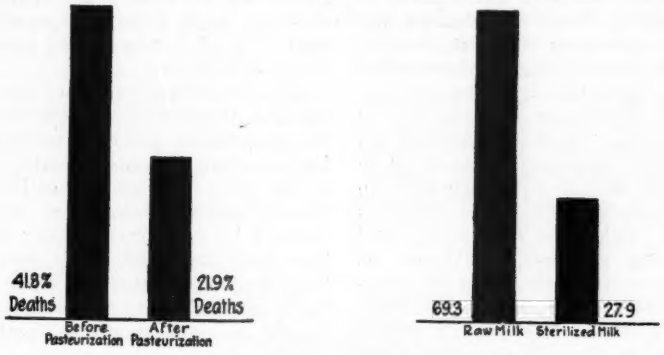
"I am in receipt of your letter of the 21st instant, with which you enclosed a copy of an ordinance which you state was formulated by the representative group of milk producers, milk dealers, health commissioners and other dairy scientists in conference in Chicago on August 1st, 1922.

"You request that I advise you whether this proposed ordinance in my opinion is in conflict with any of the laws of this State, and is in my opinion constitutional.

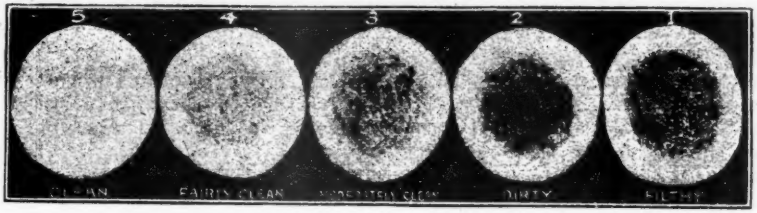
"I have examined said ordinance with some care and while I have not had time to examine at great length the authorities, I am of the opinion that said ordinance does not conflict with any law of the State and is a constitutional exercise of the powers granted to city councils in this State."

GRAPHIC ILLUSTRATIONS OF THE HELPFULNESS OF MILK ORDINANCES

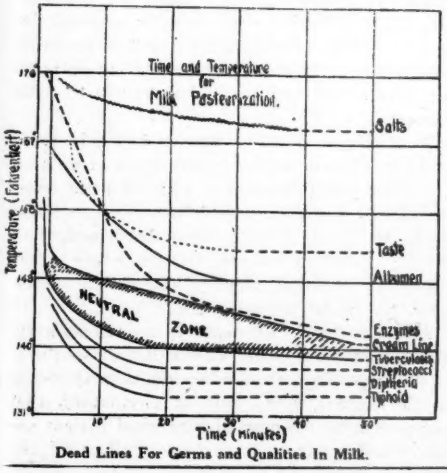
Courtesy of F. A. Laird, Chief Veterinarian of Illinois



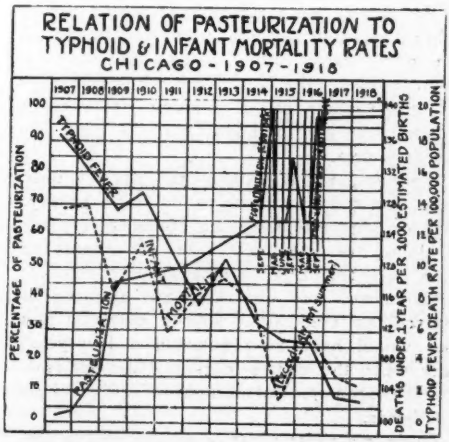
Death Rate Before and After Pasteurization.



Dirt in milk may be demonstrated by running one pint of it through a cotton disc one inch in diameter. Here are the discs from clean milk and dirty milk.



Illustrating the effect of Pasteurization on the content and taste of milk.


RELATION OF PASTEURIZATION TO TYPHOID & INFANT MORTALITY RATES
CHICAGO - 1907 - 1918
1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918
PERCENTAGE OF PASTEURIZATION
DEATHS UNDER 1 YEAR PER 1000 ESTIMATED BIRTHS
TYPHOID FEVER DEATH RATE PER 100,000 POPULATION
TYPHOID FEVER
PASTEURIZATION
INFANT MORTALITY

The Effect of Pasteurization on the Death Rate from Typhoid in Chicago.

"SLEEPING AT THE SWITCH"

A recent issue of the Breeders' Gazette tells us the truth about our poor salesmanship in an editorial entitled "The Veterinarian and Salesmanship." The editor of this, the greatest livestock paper tells us that we have fallen down badly in the matter of getting the facts about veterinary science out to the people, and chides the American Veterinary Medical Association for not sponsoring a movement in that direction, as well as for having failed to undertake a campaign against the numerous fake remedies which exact such a large toll from the trusting stockman, who knows no better than use them because no one in authority has ever told him about their worthlessness. This is surely a case of sleeping at the switch, and moreover it is unfortunately a case of being aroused by the certain victim of the impending wreck.

SPEEDING UP IN MINNESOTA

Forty-three veterinarians operating under Chief Veterinarian Cotton of Minnesota swept down upon Meeker county that state and in two weeks tested 46,000 head of cattle for tuberculosis, and thus in that short stretch of time placed another county of the country a step forward toward accreditation. The findings of this remarkable drive was less than 4% of tuberculous animals, the cost approximately 25 cents per head, and the gain in the prestige of the dairy interests of the county incomputable, according to a lengthy press report, which goes on to state that the cattle of the county were not only increased $10.00 a head in value but the celebrated butter of this great dairy county brings one cent a pound more on the New York wholesale market, and packers pay a premium of 10 cents a hundredweight on hogs from the new disease-free area.

"Speeding up in Minnesota" doesn't only mean that the chief veterinarian has a speedy, hard working staff under his command capable of doing the important thing of expediting work once begun, but it means that the people of Minnesota and elsewhere are grasping at tuberculosis eradication with a determination that would have been amazing a few years back, when the masses in general did not realize the economic advantages of tuberculous free herds.

There is a great sense of satisfaction in noting at last that bovine tuberculosis is being recognized as a bad companion, that healthy herds are worth more than tuberculous ones, that milk products from such herds have a greater market value, and that other animals, especially hogs, from clean areas bring 10% more from the packers than those from infected districts.

In other words, the attitude toward tuberculosis eradication is changing very fast since the veterinarian has been working with and for live stock interests instead of pinning all of his faith in the vagaries of infant hygiene. The Minnesota situation proves the contention, since no knowing one will deny that it would have been impossible for 43 veterinarians to have swept down upon the dairymen and tested 46,000 cattle of a county a few years ago without the assistance of the national guard.

THE MORTALITY OF ANESTHESIA

Ever since the days of Morton and Wells the question of just how many deaths are caused by the administration of inhaled anesthetics, has attracted continuous attention from surgeons, and although the accuracy of available statistics has never been insisted upon, the discrepancy of reports appearing in books and current medical literature would indicate that figures do lie or at least do not enlighten one who feigns to consult them. One writer will place the mortality rate from nitrous oxid at 1 to 1,000,000 and another places it as high 1 to 650, leaving the seeker of information to guess the truth somewhere between these widely separated figures. Then, we have reports of anesthetists who claim to have administered 50,000 anesthesias without a casualty, others claim 14,000 and still others, more modest, place their luck around the 6,000 to 7,000 mark.

In the light of these figures it would seem that there must be some difference of opinion as to just what constitutes a death from anesthesia. It certainly would be unjust to anesthesia to charge it with every death occurring in the operating rooms, for there are other causes of death in surgery besides the occasional one from the anesthetic.

At least this is the truth in animal surgery. In surgery on human beings it is also likely to be true that certain accidents may occur to the organs, splanchnic or circulatory, that can prove the undoing of a surgical patient entirely independent of the toxic effect of the inhaled drug.

We have had deaths from reflex syncope, coronary embolism, rupture of the heart, rup-

ture of the coronary artery, dilatation or rupture of the stomach to which the anesthetic did not contribute.

On the other hand, we understand that it is quite the custom in surgical circles to relieve the anesthetist of all responsibility in the case of patients dying after they have left the operating room no matter how badly saturated they might be. In other words patients overdosed who survive the operating period and yet die from anesthesia (not including pneumonia) are not charged to the anesthesia. It is obvious in computing statistics that these cases are not always put on the same side of the mortuary table by surgeons, and therefore are of little value in determining just how frequently patients get fatal doses of ether, chloroform, etc., while undergoing surgical operations.

DREYER'S "DE-FATTED" TUBERCULOSIS BACTERIN

Professor George Dreyer, a Danish bacteriologist, has discovered a new bacterin that is proving to have merit in immunizing and curing tuberculosis and although the discoverer has warned against any permature enthusiasm and sweeping conclusions authentic reports already recorded indicate that a real step forward has been made in the treatment of tuberculosis, if not also in the preparation of other bacterins and vaccines.

Dreyer has shown that the fat contained in dead bacteria injected into the living body is the element which prevents bacterins from producing a good immunity, just as fat makes bacteria acid-fast, and he thus conceived the idea of testing the merit of tubercle bacilli from which the fat had been removed with formalin and acetone. The results thus far have been exceptionally favorable in the case of guinea pigs artificially infected with tuberculous material; and good progress is also being made in the treatment of some twenty cases of consumption in humans. Other results, hopeful and even striking, have been recorded but these are reported with great caution for fear of a misinterpretation of the facts thus far established.

The first schools to teach medicine in the new world was the St. Thomas University at Santo Domingo, founded November 27, 1538. Next came the universities of Mexico and Lima, Peru, organized in 1551. Several others followed and all were in the southern countries settled by the Spanish and Portuguese.—A. M. A. 81, No. 1-7.

SOME HORSE HEROES OF MODERN WARS

Fairfax, ridden by General Washington when he took command of the continental armies, and fatally wounded at the battle of Trenton.

Blue Skin, ridden by General Washington at the Battle of Monmouth, and fell exhausted from excessive heat and terrors of the fight.

Nelson, presented to Washington by Governor Nelson of Virginia and ridden by the general until the surrender of Cornwallis. He survived his master and died at Mount Vernon at the age of 36 years.

Marengo, famous war horse of Napoleon Bonaparte, an Arabian horse captured during Napoleon's Egyptian campaign, wounded seven times and was last ridden by the general at the battles of Marengo, Austerlitz, Jena, Wagram, the disastrous Russian campaign, and finally at the general's last battle—Waterloo.

Copenhagen, the famous and favorite war horse of the Duke of Wellington, the Iron Duke, and ridden by him before his victorious army at Waterloo, died at the age of 27 years and was buried with honors at the Duke's estate at Strathfield in 1835.

Unnamed but famous horse ridden by Stonewall Jackson on the day of his tragic death and now preserved in the relic room of Confederate Soldier's Home at Richmond.

Winchester, celebrated horse and hero of "Sheridan's ride", ridden by General Phil Sheridan to rally the retreating armies at Cedar Creek. The ride was from Winchester to Cedar Creek, hence his name, which previously had been Rienzi.

Black Jack, a coal-black horse ridden by General John A. Logan in many battles, notable among which is the Battle of Atlanta, where after the death of General McPherson, Logan mounted on Black Jack rallied the staggering army. After the war Black Jack was poisoned by General Logan's political enemies.

Lexington, presented to General Sherman by friends, and ridden by him at the Battle of Kenesaw Mountain and during his march to the sea.

Unnamed, mount of General Steedman at the battle of Philippi shot dead under him after giving his famous order "About face, follow your general".

Cincinnati, favorite horse of General Grant, presented to him by Ohio friends when he

took command of the Army of the Potomac. and ridden by him until the end of the war.

Firefly, mount of General Isaac R. Sherwood, shot dead under the general at the desperate charge at Franklin in 1864, had been the hero of many battles and was mourned as a lost friend.

Traveler, favorite mount of General Robert E. Lee, commander of the Confederate armies, and noted war horse that served the general through many trials and ridden by him at the time of his surrender.

Comanche, ridden by a trooper of the 7th cavalry, the only survivor of the battle of the Little Big Horn (Custer's Massacre) July, 1876, wounded seven times and abandoned by the Indians, wandered away from the battle fields and was picked up and removed to Ft. Reilly where he recovered and was pensioned by the government never to be mounted again.

Dandy, favorite mount of General Custer, died when the general fell in his last, ill-fated battle.

DAIRY AND MILK INSPECTORS' CONVENTION

Dr. S. L. Prigrim, chief veterinarian of the board of health of Milwaukee, attended the International Association of Dairy and Milk Inspectors held at Washington, D. C., September 28-October 1, and reported during a brief visit to the journal office that the meeting was a pronounced success and the association a growing enterprise in which veterinarians are playing a major role. There were 250 in attendance, 50% of which were veterinarians either officially engaged in milk and dairy hygiene or representatives of dairy establishments, according to Dr. Pilgrim's report.

It is worthy of note that the veterinarians represented were from small municipalities rather than from large ones, and that they came from all parts of the country—from coast to coast—indicating that milk hygiene is being earnestly considered not only in the large cities as formerly but almost everywhere, and that veterinarians by reason of their training are being recognized as the logical experts of the executive authorities to whom the enforcement of better conditions is charged.

That dairy and milk inspection is now a stern reality was shown by the magnitude of this convention; and the interest in its activities by veterinarians is a credit to the profession.

WARTS CAUSED BY DIRT

According to Weber, warts of the skin in young cattle are the result of chronic irritations by dirt or some other foreign object. He states that they are not contagious, although certain families of cattle are especially susceptible to them. Sex and breed are not predisposing influences. Warts usually occur in young animals and disappear with age.

According to Weber, warts of the skin in young cattle can be successfully removed by twisting them off by means of the thumb and finger.

TOE PECKING

Toe pecking is a condition sometimes observed in young chickens. The habit is initiated by chickens picking their feed contacting the toe and perhaps injuring sufficiently to permit of the escape of blood. When the little chicks taste the blood they will constantly peck at the affected member until they have probably so injured it that the toe will slough. This habit can be prevented by properly feeding the chicks and should there be any attempt at toe pecking the affected individual should be permanently removed.

A TIP FROM DIXIE

"There is a right and a wrong way to lead a mule," says a Southern writer for the United States department of agriculture. "A man who looks at a mule and lugs at his head will not make progress. The mule can not be pulled. He will usually walk quietly, however, if a man will walk away in the desired direction. Neither can you "bully' mules into going through tight places; they are somewhat like sheep and if the leader can be induced to go the rest will follow."

TIMOTHY AND ALFALFA

The craze for alfalfa and clover as a roughage for dairy cows and the generally accepted idea that timothy hay is worthless is not born out by experience if the proper amount of protein is allowed when the latter is fed. The advice to sell timothy and buy alfalfa with the proceeds can only be approved when the cost of the protein required to make up the shortage has been computed. It must always be remembered in feeding herbivora that roughage has a physical as well as a nutritive function to perform. In other words, the value of a roughage is not all a chemical one.

Editors' Personal Page

Oh, for the days when thrills could be had by driving a rubber-tired buggy with the top turned down.

The bee is a domestic animal. The veterinarian should learn something about its diseases. Read about American foul brood in this issue.

If you receive your journal late remember the post office department has lots to do around the first of the month.

Principal McGilvray reports 72 students enrolled at the Ontario Veterinary College for the present session, of which 16 are freshmen, 14 sophomores, 15 juniors and 28 are seniors.

A farm adviser in western Illinois advertises through the local press that the saving in hog vaccination is worth the price of membership in the farm bureau, but he does not say that the members must pay cash for the serum or else go to the local veterinarian where he can get credit.

The death of 65 hogs on a farm near Stronghurst, Illinois, recently from a disease that has caused efficient doctors to disagree, according to a local press report, indicates how futile it would be to turn over the treatment of swine herd scourges to every Tom, Dick and Harry, when good veterinarians, after careful, intelligent investigation, are often puzzled.

THE HONOR OURS AND THE PLEASURE MUTUAL

Professor F. T. Daubigny, dean of the faculty of the veterinary department of the University of Montreal, in a cheerful letter of recent date, reflecting over the charming events of the 60th annual convention of the American Veterinary Medical Association expresses his thanks for the honor of having been elected 1st vice-president "de la plus grande association veterinaire de mode entier", and desires that his appreciation of this decoration be made known to our readers.

PLEASE BE PATIENT

It seems that the organized dog fanciers have the same viewpoint relative to distemper vaccination as the swine owner has had in regards to vaccinating hogs. Both seem to believe that the control of disease is but the art of using a hypodermic syringe. The difference is, the dog fancier is still looking for the right kind of ammunition whereas the swine owner has already been supplied. The veterinarian supplied the ammunition in the case of hog cholera and in time, dear fanciers, if you will but have patience, he will supply the other.

McLEAN COUNTY ILLINOIS

Announcement of the appointment of Dr. F. L. Varble, a practitioner of Atlanta, Illinois, to the position of county veterinarian of McLean county, recalls to mind the greatness of this geographic district relative to veterinary work. McLean county was the center of the draft-horse breeding industry for the prairie pioneers, the early home of the American-bred and imported Percheron; it is the site of the first really modern rural veterinary hospital in the middle west (built by Dr. W. L. Williams in the early 80's); it is the county selected by the United States bureau of animal industry for the well-known demonstration on the control of swine ascarids; it has one of the best local veterinary associations in the country; it was first to establish a working understanding and amicable relations between the farm bureau and the practicing veterinarian; and it now promises to excel in accredited herd work. Let us hear from other famous veterinary counties.

A subscriber writes, "Your journal is highly instructive, entertaining, cheerful and sometimes caustic. I like it."

To the Editor: I admire Veterinary Medicine because it is not afraid to speak out, no matter where the chips happen to fall. It has had its fault, but gee, I do not know what the veterinary profession of this country would do without such an independent organ.—E. S. L., Cal.

Purely Practical

Expression of the corpus luteum helps materially in the treatment of pyometra of cows. —Lothe.

"The value of insecticides and disinfectants is being greatly increased by the application of the principles of colloid chemistry."—Ohio Exp. Sta. Bul.

Another exceptionally practical and economical wash for wounds is made by adding copper sulphate to common white lotion.

A saturated solution of sulphate of iron is a good mixture to keep in a stock bottle in the pharmacy. It is good application for all kinds of wounds, and is generally potent against necrophorus infections.

The anaphylactic shock occuring after the administration of protein substances (vaccines, bacterins, serums) for therapeutic purposes is due to the sudden modification of the organic humours of the body—in other words a colloidal clasmatosis.—Widal.

Dr. S. L. Stewart believes milk fever is anaphylactic shock; and also that the obstinacy of a given case may be due to delayed involution of the uterus. He recommends examination of the genitals and treatment of any abnormal condition thus disclosed, such as open cervix, relaxed uterus, retained pieces of afterbirth, accumulated liquids, etc.

FOOT-ROT IN SHEEP

The best way to handle a flock of sheep affected with foot-rot is to isolate all the affected animals, pare the feet surgically, bath well in a saturated solution of copper sulphate, turn them into a stall carpeted with three to four inches of slacked-lime and then give them the freedom of a clean dry pasture or yard. When numbers forbid individual treatment the paring may be omitted, but the results will not be as good.

Parasite worms are dangerous carriers of bacteria.—Hall.

Insanitary surroundings, particularly unclean farrowing houses, wallows and stagnant pools, are the principal causes of parasitism in swine.

Lest we forget: Carbon tetrachlorid is effective against bloodsucking worms of dogs, foxes, cats, sheep and cattle; but is less effective than chenopodium for ascarids of swine.

Successful anthelmintic medication and prophylaxis presupposes a knowledge of the life history of a parasite, and attack where least defended.—Hall.

Fluid extract of ipecac given at the rate of ten to fifteen drops night and morning is mentioned among the drugs which have a favorable influence on the course of the disease. Our observations however have been that ipecac has a slight preventive action but does not reduce the mortality of turkeys already affected.

BLOOD SERUMS FOR WOUNDS

In lieu of normal horse serum any of the immune sera made from horses blood may be used as local applications to fresh made wounds with exceptionally good results. The benefits derived is due to the positive chemotactic action on the polyneuclear neutrophiles.

The wound after cleaning is coated freely with the serum and then covered with a bandage. The serum should be applied warm. It adheres to the wound and forms a perfect coating. Devitalized tissues separate en mass and leave red, healthy granulations. Serum should not be applied in the later stages of wound healing when leukocytic action may retard healing.

Antihog-cholera serum will answer every purpose, and in view of always being available should be thought of in this connection.

General Section

The Relation of Life Histories to Treatment and Prophylaxis in Parasitism

By Maurice C. Hall, Associate Editor

ANTHELMINTIC medication is a form of attack in the warfare on worms. Prophylaxis is a form of blockade in this warfare. The weapons of anthelmintic medication are usually poisons. The blockading tactics of prophylaxis are largely along the lines of sanitation. Anthelmintic medication is in the nature of an occasional spectacular assault with weapons of offense which must be used infrequently and with great care to avoid injury to a host animal in destroying a parasite. Prophylaxis is a less spectacular affair of a more continuous nature and with weapons of defense which must be used more or less constantly to make them effective. Medication is properly the field of the veterinarian, the man skilled in the nature, use and administration of drugs. Prophylaxis is primarily a field in which the veterinarian has an advisory capacity and the stockman and farmer have the burden of action and responsibility.

LIFE HISTORY SUGGESTS PLAN OF ATTACK

Anthelmintic medication and prophylaxis against worm infestations are matters which rest in large part on the life histories of the worms involved in any given case. That prophylaxis is based on life histories is a matter of common every-day knowledge. We are all familiar with the idea that we must first learn the life history of a parasite before planning prophylactic measures, just as a general must first ascertain from his scouts the positions and movements of an enemy before giving battle.

The Texas Fever Tick as an Example

We are familiar with classical examples of this in the cases of the ticks. If we must have a cattle tick, then our common cattle tick, Boophilus annulatus, is in many respects a good tick to have. This tick attaches to cattle when it is but a seed tick, recently hatched. Once attached to a cow, it stays on the animal originally attacked, molts there, matures there, and finally drops off as an engorged tick to lay its eggs and die. When we wish to attack this tick it is easy to find it. These ticks are all on our cattle with few and negligible exceptions. We can control the movements and disposition of these cattle. We can dip them and dipping is a simple and effective procedure.

Case of Other Ticks Different

Consider now how different the case is with the tick which does not get on a cow and stay there until time to oviposit and die. Consider the ticks which pass the first stage or the first two stages of their lives on wild rodents or wild carnivores, animals over which we have little or no control. Instead of being in a position to dip cattle and put them on clean areas where they will be safe from reinfestation, we are constantly confronted with the danger of reinfestation from ticks carried on wandering rodents and carnivores. Under such circumstances dipping must be frequently repeated.

In the case of the parasitic worms, control measures must be based likewise on the life histories. If the worms have intermediate hosts, as in the case of flukes and tapeworms, the best point of attack in control is often that of destruction or control of intermediate hosts. Thus snails may be destroyed and their habitats in wet pastures rendered unfavorable by draining as a measure of control for flukes. The tanking of viscera and flesh infested with cysticerci in the course of meat inspection procedure is a valuable control measure for certain tapeworms. In the case of nematodes having intermediate hosts, similar control measures are applicable. Thus in the case of the species of Habronema which develop in the house fly, fly traps and the proper disposal of horse manure to prevent the breeding of the fly are measures of value in the control of the parasites. In the case of such nematodes as the swine ascarid, a knowledge of the life history with its evidence of age immunity has led to the development of adequate control measures in the form of a sanitary system under

which young pigs are protected from worm infestation until they have reached an age, about 4 months, when they have a comparatively high immunity to gross infestation and to the injurious effects of worms.

Embryo Mammal Well Sheltered

In the case of swine with infestations such as those of ascarids, we have an illustration which deserves detailed consideration and from which certain general principles may be formulated. The embryo of mammals lives in a comparatively safe environment, supplied with suitable and readily available food by the mother, maintained at a fairly uniform temperature, and protected against violence and infection for the most part. It is not entirely safe from accident and infection, but it is comparatively so. At birth the young animal exchanges the safe food supply provided by the mother for a new food supply with all the dangers of foreign proteids, various toxic substances, unsuitable or deficient foods, inadequate food or overfeeding, and the burden of accustoming a delicate and as yet not entirely adapted digestive tract to the work of digesting the unfamiliar substances. It exchanges the uniform temperature of the maternal uterus for the heat of the summer noon and the cold of the winter night. It exchanges its protected environment for one abounding in danger from traumatic injury and from the innumerable bacteria and parasitic agents which now surround it and enter it by all the available channels of the digestive tract, respiratory tract, skin, etc.

High Infant Mortality Not Surprising

It is not surprising that many of these young animals succumb in the new and hostile environment and that the infant mortality among livestock is high. If the environment is not too bad, the animals with good heredity and a mals, the "tougher" specimens, will survive. while weaker animals with less natural immunity will perish. But if the environment is bad, if the young animal must live in filthy surroundings and be subjected to the insult of large numbers of pathogenic bacteria and parasitic worms, even strong animals may perish and only a few of the naturally immune animals, the "tougher" specimens will survive.

Environment Doubly Important to the Young

We can not expect the new-born and young animals to have an acquired immunity. This, as the term implies, must be acquired, and to acquire it takes time. In other words, acquired immunity is, among other things, a matter of age. The older animal of good heredity and natural immunity, with an added acquired immunity, is in a position to fend for itself. Even this animal, however, needs the aid of the livestock owner if the animal is to become a profitable animal. This aid the owner can extend in his control of the environment, with all that implies in the way of feed, water, shelter, care and surroundings. But if the matter of environment is important for the older animal, it is doubly important for the young animal. In the case of the young animal, the lack of acquired immunity and tolerance calls for special attention to environmental conditions, and here is where prophylaxis of a suitable sort must supplant acquired immunity until age with attendant exposure to light infections and infestations develops the lacking immunity.

In view of the fact that prophylaxis of a practical sort can not afford absolute protection against disease, it will follow that some animals will become subject to infectious diseases, and in these cases the veterinarian enters the field of treatment. In some cases we have feasible prophylaxis, and treatment will be a matter of secondary importance. In other cases feasible prophylactic measures have not yet been developed to an effective stage, and treatment is of primary importance.

Life History Germane to Successful Treatment

To administer anthelmintic treatment successfully it is essential that we know something of the life history of the involved parasite. Such knowledge often explains our seeming failures and points the way to success in treatment. The following illustrations show something of the complexity of the problem.

Prenatal Infestation Explains Some Failures

A veterinarian recently stated to the writer that shortly before whelping a bitch had been treated by him for ascarids and then placed in a clean area. In spite of this the pups were heavily infested with ascarids at the age of 2 or 3 weeks. How are we to explain the failure of an apparently successful treatment of the bitch coupled with the indicated protective sanitary measures.

Apparently the explanation is to be found in the occurrence of prenatal infestation. It has been shown by Fuelleborn and by Shillinger and Cram that such prenatal infestation with ascarids may occur in pups. In similar ways, animals may become infested in utero with hookworms and lungworms. Although evi-

dence is not yet available in regard to most other worms, it nevertheless appears likely that prenatal infestation with worms is possible in the case of other worms having a life history which involves the wandering of the larval worms through the tissues and blood stream. To prevent infestation of pups with ascarids it would appear to be necessary to take into account this matter of prenatal infestation.

"Worming" Bitch Before Breeding Not Always Effective

To this end the bitch should be treated for worms before being bred and then put in clean quarters. Even this measure does not exclude the possibility that ascarid larvae may be wandering through the body of the bitch, thus escaping the treatment, and that on arriving at maturity these worms may endanger the pups by means of the eggs they produce. Such a danger would present at a time when the pups were still susceptible to infection, as the ascarids require about a month to develop from larvae to adults, and Pagels finds the maximum infestation in pups from 41 to 50 days old. From the fiftieth to the seventieth day many ascarids pass spontaneously, a thing which suggests the development of a relative immunity about this time. In general ascarid larvae end their migrations and reach the intestine in the course of 2 weeks, although some of them are still alive in the tissues at the end of 3 weeks or more. However, a second treatment for ascarids given 3 weeks after the first treatment to a bitch which has been in clean quarters since being treated and then bred would probably leave her free from ascarids. Whether this two-treatment method in connection with sanitary precautions is actually necessary or only theoretically desirable would have to be ascertained by experimental test. The case, however, illustrates some of the complications present in connection with treatment as related to life histories.

Migrating Strongyles Escape Anthelmintics

A somewhat similar case is met with in treating horses for strongyles. Worms of the genus *Strongylus* have the habit of invading tissues and remaining in them for relatively long periods, subsequently migrating to the large intestine. It is quite possible, as the writer has pointed out in a paper on the treatment of horses for worms, to remove all the strongyles present in the intestine and then find on postmortem examination a week or two later a number of strongyles present, some of them still retaining the larval cuticle indicating that they reached the intestine after the passage of the anthelmintic through the digestive tract.

Anthelmintic Important But Not Complete Treatment

These complications show some of the features of the life history which must be taken into consideration in treating animals for worms and in explaining results. They show that anthelmintic medication is not merely a matter of administering a satisfactory anthelmintic and assuming that this ends the matter and ensures satisfactory results. It is really a more difficult and complicated matter. However, we must not assume from this that anthelmintic medication is a matter of small importance. In many cases it is a matter of primary importance.

In the case of our grazing animals, prophylaxis is a more difficult matter than in the case of our swine, dogs or cats. All the prophylactic measures along the lines of pasture rotation have proved ineffective in the control of stomach worms in sheep, and repeated anthelmintic treatments alone have proven satisfactory. Many of the worms infesting horses, sheep and cattle are pathogenic and in default of adequate prophylactic measures we must depend on anthelmintic treatments, basing our methods on what is known or surmised in regard to the life histories if we wish to obtain the largest measure of success. Even in those cases where we have excellent preventive measures, it can not be assumed that anthelmintic medication is of no value.

Worms Are Dangerous Carriers of Bacteria

To shut off the infection at its source by destroying the worms is a measure of value that can not be ignored if we aim at eradication and that is of evident utility as a mere control measure. Worms are not the inert things we commonly imagine them to be. Their potentialities as producers of seriously dangerous toxins and as inoculators of bacteria and other etiological agents of disease are probably barely suspected at the present time. Their removal may mean much more in the way of disease control than we suspect, just as their control by sanitary measures has had results beyond our anticipations.

Dr. T. A. Kragness, a veterinary practitioner of Chicago, by reason of having made a serious study of bee disease was selected to occupy the important position as chief bee inspector of Illinois.

Agriculture and Agricultural Education in Brazil

By G. A. Roberts, Lavras, Minas, Brazil
Professor of Veterinary Science, Bacteriology and Zoology, Escola Agricola

BRAZILIAN agriculture was partially depicted in Lavras the middle of July last (mid-winter here with frosty nights), at a district or regional Fair. This was the second annual event conducted by the agricultural society of Lavras municipality. It was held in buildings on the grounds of the Escola Agricola de Lavras.

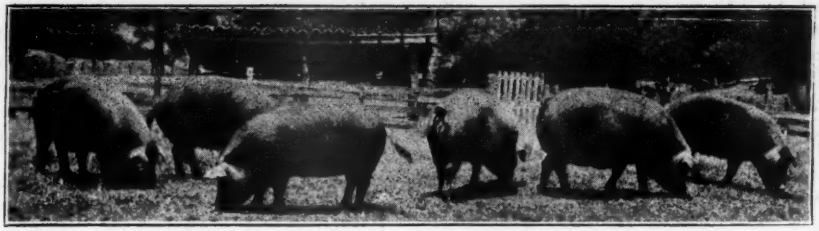
The State of Minas attempted to conduct a state fair several years ago but after two or three years gave it up because of the expense and lack of interest. Fairs are still rather novel in Brazil though some, of one kind or another, were held in the country many years ago. Those that are now held are largely composed of live-stock exhibits. The more conspicuous fairs or expositions are: The National Live-Stock Exposition, held annually in Rio during September. Owing to the "double" effort put forth last year at the opening of Brasil's centennial exposition no fair was held this year. Likewise the São Paulo state live-stock show was not held this year. It is not always an annual affair but when held precedes the National Fair by several months. Rio Grande do Sul, in South Brasil, is also quite alive to the advantages of exhibits of its live-stock.

The Common Farm Transportation in Brazil.

District Fair at Lavras, Minas

The Lavras fair attempts to stimulate greater interest in general farm crops and farming as the following sections of exhibits indicate: Agriculture, horticulture, live-stock, agricultural machinery, domestic arts and school exhibits. The federal, state and municipal governments contributed money premiums to the extent of 3 contos of reis ($750.00 normal exchange), besides a large number of special premiums. Because of the vast territory of Brasil and its comparatively limited population (31 millions) there is little real farming as it is known in the states. There are relatively few ploughed fields to be seen. It is primarily a live-stock grazing country, with considerable quantity of fruit, including café—over one-half of the world's supply. While nearly one-half of the total area of Brazil is timbered, lumber and wood are becoming quite scarce and high priced along the railway lines because wood is used almost exclusively to fire the engines. Eucalyptus is being planted and grown extensively by railroads and others to supply the fuel demand.

In spite of the above mentioned existing conditions the agricultural and horticultural exhibits at the Lavras fair were very creditable in numbers and quality. There were some 200 entries consisting principally of cotton, rice, Irish and sweet potatoes, coffee, sugar-cane and sugar, corn, tobacco, lettuce, couve, cauliflower, onions, peas, beans, including soja, cabbage, tomatoes and squashes. There were also such root crops as manioc, inhame, cará and jacalupé and such fruits as pineapples, bananas, oranges and lemons (including a very sweet lemon). It was not the season for mangoes, abacates (avogados), jabotacabas, etc.



A Bunch of Duroc Gilts, Property of the College.

Foot and Mouth Disease a Hindrance

Owing to one of the frequent (annual, semi-annual or biennial) epizootics of foot and mouth disease raging at the time, very few cattle and swine were exhibited. However there were some 150 entries in the live-stock section. There were several head of Holstein and Brown Swiss dairy cattle and a number of excellent Duroc swine, besides those of the college herds. Among the chickens were specimens of Rhode Island Reds, Buff Cochins, Black and White Orpingtons and Barred Rocks. There were also turkeys, geese, ducks and pet animals.

Perhaps the best exhibit among the live-stock, and certainly the closest competition, was that of the class of saddle horses, consisting of stallions and mares. There were 15 entries and close competition between the best five. One Spanish jack and a few mules were also exhibited.

Farm Machinery Exhibited

As before stated this is not a so-called farming country, hence the amount of farm machinery is limited, however if one goes far enough he can find, not only all kinds of farm machinery, but everything manufactured in the States—except veterinary products—which cannot be sold here at a profit and since the recent law now in force—so far as I am aware—no American company has been able to secure license to ship their products into the country.

Tractors Prohibited

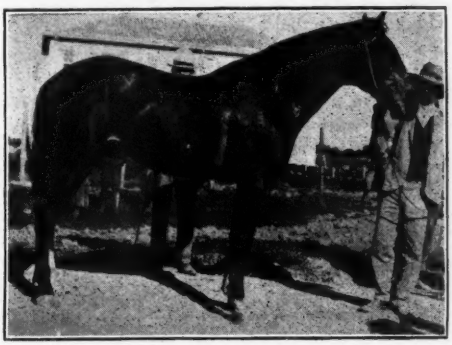
There are a few tractors to be seen over the country, but their use is prohibitive, except in rare cases, because of the cost of oil and gasoline, which have not been unearthed in any quantity here, as yet. A Fordson tractor was on the job at our fair and as usual it drew the crowd when it began to make its little fuss. Plows, harrows and cultivators made up the bulk of the entries in this section. The hoe is still an instrument of torture on many farms in this country. In the interior it is the common practice to cut down the timber, trees often 75 feet in height, and as soon as a little dry, burn what will burn, then take a hoe and plant corn in among the dead branches. If it is to be planted to coffee the trunks of the burnt trees are first piled into rows. A very limited amount of hay is put up in the country, and less silage, but a mower, a combined rake and tedder and an ensilage cutter were exhibited and demonstrated as used on the college farm.

Free Moving Pictures

A feature that proved quite attractive and profitable was the nightly free moving pictures illustrating up-to-date methods of farming in the States, eradication of the cattle tick, and public health measures.

AGRICULTURAL EDUCATION AND PROPAGANDA

As early as 1860 the Ministerio de Agricultura was established by law in Brasil. In 1877 the first school of agriculture was established



Type of Well-Gaited Saddle Horse Shown at the Lavras Fair.

in Bahia, but ceased to exist long ago. Later, schools were established in Pernambuco, Sergipe and Pará in North Brazil. The writer and Mrs. Roberts went to visit the school in Pará (on one of the mouths of the Amazon) on their way back to Brazil last February but found it

closed for the summer vacation—December, January and February. Some twenty years later Government schools were established in the States of São Paulo, Rio and Rio Grande do Sul.

São Paulo Agricultural School

The State school of São Paulo, located at Piracicaba, is perhaps the most noted in the country and had among its early directors Dr. Eugene Davenport of Illinois. Some several years later the directorship was filled by Dr.

A Young Swiss Bull, Property of the College.

C. D. Smith of Michigan for a period of five years. Quite a number of Americans have been connected with schools and departments of agriculture in the past but Brazil is now educating her own boys both at home and abroad. Every year some 20 to 30 graduates in agriculture from Brazilian schools are given scholarships and monthly allowances for two years to study in a foreign country, many of whom go to the States.

São Paulo Experiment Stations

In connection with the Piracicaba school some experimental work in farm crops and animal feeding is conducted. One of the oldest experiment stations in the country is at Campinas, also in the State of São Paulo. A considerable part of the investigations made there have been with reference to diseases and insects injurious to plants. One of the most serious enemies to agriculture in the country is due to a Termite, called "Sauva ant," from its resemblance to a large ant. It lives in large colonies, building large "houses" of earth mixed with a secretion. These houses are often as much as 3 feet in diameter by 7 feet high. They strip the leaves off of many plants.

Escola Agricola de Lavras

The Escola Agricola de Lavras is one of the three schools of the Presbyterian "Instituto Evangelico" of Larvas, consisting of the Collegio Kemper (primary) Gymnasio (high school) and Escola Agricola (college of agriculture). Note the difference in the use of the terms, school and college as contrasted with the use in the states. The Instituto opened in Lavras in 1892 and the Escola Agricola was inaugurated in 1908. It receives annual subventions in limited quantities from federal, state and municipal governments.

The faculty of the Lavras school consists of four American teachers: B. H. Hunnicutt, director; C. C. Knight, J. H. Wheelock and writer and four Brazilian teachers, two of whom received instruction at Ames, Iowa.

The course of study in Brazil is usually of three years, but the Lavras school maintains a four year course. As summer ends here in February the school term opens in March and closes in November, with three summer months' vacation, December to February, inclusive. The curriculum of study is fairly typical of the schools of the country. It includes the following: Sacred history, chemistry, physics, botany, zoology, mathematics, wood shop surveying, bacteriology, phytopathology, entomology, veterinary science, farm mechanics, rural economics, animal husbandry, dairying, horticulture and agronomy.

The school equipment consists of a commodious new building for class rooms and laboratories and a dormitory building. The laboratories are fairly well equipped, especially those of chemistry, physics, bacteriology, and zoology. The school owns about 600 acres of land, most of which is in grass and timber but also considerable is in fruit trees, coffee, manioc, sugar-cane and corn. It is also stocked with horses, mules, hogs and cattle.

Having no Practicing Veterinarians, Farmers Castrate Their Own Pigs.

The pictures were kindly loaned by Col. D. C. Collier, U. S. Commission General to the Brazilian Centennial Exposition.

European Sidelights of Interest to the Veterinarian

By Edw. M. Boddington, Kansas City, Missouri
Secretary of the Associated Serum Companies of America

DURING May and June it was my privilege to visit, study and observe the people and economic conditions in England, Belgium, France, Switzerland and Italy. The members of the Associated Serum Companies of America were exceedingly interested in European conditions, and I made my observations in the interest of my clients, who now permit me to pass my conclusions on to the veterinary profession of America.

It is impossible to fully cover 15,000 miles in a single write-up, but in response to Dr. L. A. Merillat's invitation I will endeavor to make general observations and conclusions which may interest the veterinary profession.

Likes England the Best

The Anglo-Saxon world speaks, acts and conducts itself in a civilization which to a large extent is unknown to Latin Europe. Therefore the things of greatest interest to Americans are to be found in Great Britain. Europe is not such a large place, and it is possible to travel two months in England and the countries above indicated and obtain fairly accurate information and ideas on the habits and customs of the people. The live stock industry of these countries, of course, appealed to the writer, but it is not on such an extensive scale there as we know it in America. In Great Britain there are about two million hogs produced per annum. The people of the British Isles are very similar to us. The village and rural Englishman speaks with a brogue or Cockney accent, while the Londoner talks English very much like us. From Liverpool to Birmingham you ride through one solid chain of factories and towns. This constitutes a part of the great manufacturing section of England. Warwickshire is a country of beautiful farms, well kept, fenced by neatly trimmed hedges, producing grain, cattle, sheep and a few hogs. This county has the distinction of being the historical county of England. It is known as "Shakespeare Land". England is quite peaceful, industrious and very much concerned about the ever present and pressing subject of taxation.

Impressed with English Colleagues

In studying our Anglo-Saxon colleague I was very much impressed by the veterinary profession of the British Isles. There are five veterinary colleges in the United Kingdom. The Royal Veterinary College of London is the principal school, and it fosters and prescribes the curriculum for the veterinary colleges at Liverpool, Glasgow, Edinburgh and Dublin. Four years is required to complete the college course. A student spends thirty weeks in academic work and twenty-two weeks in assisting a practicing veterinarian each year. The class of 1923 consists of thirty students in the Royal Veterinary College at London. This is almost up to the pre-war standard. The curriculum, of course, which is pursued in the five veterinary colleges of Great Britain is prescribed by the Royal College of Veterinary Surgeons. We might compare this Royal College of Veterinary Surgeons in some respects with our national veterinary association. If a student is successful he must, after graduation, pass an examination prescribed by the Royal College, and if his name is placed upon the Register as a practitioner, his practice, conduct, ethics and life are absolutely controlled by the Royal College of Veterinary Surgeons. He cannot advertise, testify falsely, make profit on biological products or violate any article of the code of ethics prescribed by the Royal College. For a violation of the R. C. V. S. rules they will try the practitioner, take away his license to practice, take his name from the roll, reprimand him and with any suspension a practitioner is deprived of the right to charge or collect fees for any service or advice rendered.

Attributes Prestige to Parliament

You may wonder why the R. C. V. S., or national veterinary association of Great Britain, has such power over its members. The secret of their influence lies in the fact that the Royal College of Veterinary Surgeons obtains its power to control the veterinary profession by acts of Parliament. It is interesting to note that the royal charter of incorporation was granted to the veterinarians in 1844, during the reign of Queen Victoria, and the sup-

plemental charters were granted in the following order: in 1876, 1879, 1883, and 1892; and a supplemental charter in 1914 during the reign of George V. In addition to the charters above granted by the Parliament of Great Britain there is the Veterinary Surgeons' Act of 1881, which has been amended twice, once in 1900 and once in 1920. In brief, the Royal College of Veterinary Surgeons has been given full power to regulate and control the admission of veterinarians to practice veterinary surgery and medicine by Parliament and publishes annually a register of veterinary surgeons who are permitted to practice in the domains of the United Kingdom. A council of the Royal College has a right to conduct a trial over any member for misconduct or violating the ethics prescribed, and with the consent of three-fourths of the members of the council they may remove a name from the register. The law prescribes that a copy of the register shall be prima facie evidence in all cases at law as to the qualifications of any veterinary surgeon. The act prescribes that those who do not pay their annual registration fee shall be left off the register; those who violate the ethics or the prescribed law made by the Royal College are guilty of a misdemeanor punishable by fine or imprisonment. tI would be interesting to quote a section from this law governing the right of a veterinarian to collect for his services. 44 & 45 Vict. Chap. 62, par. 17 (2):

"From and after the same day a person other than as in this section mentioned shall not be entitled to recover in any court any fee or charge for performing any veterinary operation, or for giving any veterinary attendance or advice, or for acting in any manner as a veterinary surgeon or veterinary practitioner, or for practising in any case veterinary surgery, or any branch thereof."

There are registered in the Register of Veterinary Surgeons of the Royal College for 1923, 3277 veterinarians, who are licensed to practice in the United Kingdom and whose professional conduct while so practicing is absolutely controlled and governed by the will of a majority of the profession acting under its legal rights, which were received by Charter and Acts of Parliament herein described. The medical profession and the legal profession in Great Britain are controlled in like manner and there is no appeal to the courts for removing any professional man's name from the particular register. Therefore, you find in Great Britain a very high standard of ethics among professional men.

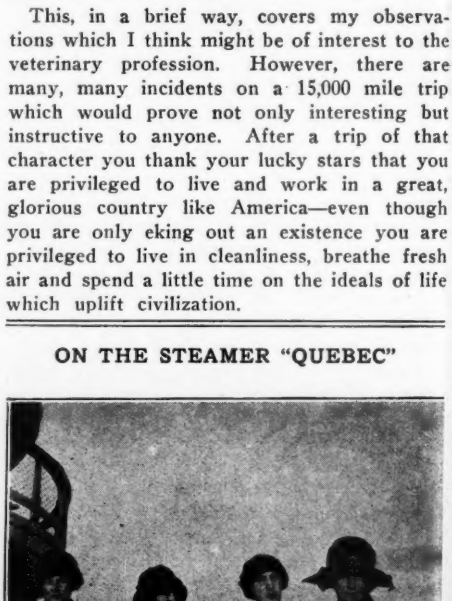
Under our constitutional form of government such power could not be conferred to a profession and the federal government could not regulate a profession within the borders of a State because of State's rights to regulate the conduct of all citizens within a State. So it would be impossible to have such a Utopia for the veterinary profession or any other profession as a national proposition in the United States.

Continental Situation Less Inviting

When you leave clean, sanitary, human England and go to Belgium, France and Italy, you cross into another world, which does not think, act or conduct itself in harmony with the modes of living to which we are accustomed in America. These countries are less sanitary as compared with our modus vivendi and it is impossible to compare the control of animal disease on the continent with that wonderful control which the veterinarians have exemplified in America.

This, in a brief way, covers my observations which I think might be of interest to the veterinary profession. However, there are many, many incidents on a 15,000 mile trip which would prove not only interesting but instructive to anyone. After a trip of that character you thank your lucky stars that you are privileged to live and work in a great, glorious country like America—even though you are only eking out an existence you are privileged to live in cleanliness, breathe fresh air and spend a little time on the ideals of life which uplift civilization.

ON THE STEAMER "QUEBEC"



Right to Left: Mesdames H. B. Risley, R. S. McKellar, R. W. Butterworth, and the Circulation Manager of Veterinary Medicine.

Verminous Aneurism of Horses

These aneurisms were already observed by Ruysch in 1665. They occur with equal frequence in asses and mules. Laboulbene observed them in the hemione.

The causative nematodes attracted the attention of the earliest veterinarians. Chabert (1782) confounded them with all the other round worms of the abdominal cavity under the name "Crinon" used by naturalist authors; Ascaris crino (Bruguiere, 1789), Crino truncatus (Lamk, 1809), Crino vulgaris (Bosc, 1809). The various designation therefore do not refer only to the Strongyles of the great mesenteric; on the contrary these were named the Strongylus armatus: minor aneurismaticus (Rud., 1809) and armatus minor (Catal, Royal College of Veterinary Surgeons, London, 1830). But the qualification "minor" can not be retained because it conflicts with the name Strongylus minor (Kuhn, 1829) which has been applied to a Pseudaliine. In fact, there is no validity except in the name Strongylus vulgaris (Looss).

Verminous Aneurism Very Common

Verminous aneurisms are extremely common in all mature and aged animals: Bollinger estimated the morbidity at 90% to 94%. They can also be encountered in young animals, as early as six months old. Poppel found them in a colt ten days old, and according to O. Martin those of colts are relatively rich in parasites.

Found in Various Arteries

They can be found in a wide range of arteries: celiac, mesenteric, renal, carotid, cranial, coronary, etc., but their place of predilection is the right branches of the anterior mesenteric, the trunk of which supplies the cecum. Ordinarily, they are fusiform and attain the size of a walnut.

Old Doctrine Refuted

According to the classical doctrine the worms are said to attack the tunica intima directly, where inflammation and ulceration causes the formation of clots, followed by dilatation of the vessel and thickening of its walls. But this pathogenesis is not in accord with the facts observed. As G. Colin already remarked, the parasites contained in the clot are never found fixed to the intima. Their rosette mouth does not enable them to wound this membrane. The study of these aneurisms by Stickler established the fact that the process is entirely different. The larvae (4 to 5 millimeters long) first invade the vasa vasorum, dilatation of which Schoubart already noticed in 1842, then obliterate and thrombose the tunica media producing hemorrhagic enfarcts and acute mesarteritis followed by periarteritis and hypertrophy of the intima which then swells and softens, and thus creates a breach upon which blood coagulates. As the thrombus forms the vessel dilates to form the aneurism. It should be remembered that the verminous aneurism has a small cavity and very thick walls, contrary to the non-verminous kind in which this order is reversed.

Larvae Found in Old Lesions

No matter how old the lesions may be they nearly always contain larvae, evidently by reason of successive reinfestation. The irritant action of the larva seems to be mechanical rather than chemical, and the aneurism usually persist until old age without producing any accident. They rarely rupture on account of being fortified by thick walls which are sometimes even infiltrated with calcium. G. Petit signalized a case of suppuration which is exceptional, and which extended to the intestinal nodules.

The obliteration of the iliac arteries is sometimes of proved verminous origin. It is manifested, as is well known, by intermittent lameness and even posterior paralysis.

Colic the Greatest Danger

But the real danger of verminous aneurisms however the grave, is colics they produce, and which are generally attributed to embolism of the colic and cecal arteries caused by particles detached from the aneurismal thrombus. Since Rigot (1829) veterinarians have noted the existence of verminous aneurism of horses dead from colics, but it was Bollinger (1870) who systematized the idea by individualizing the syndrome of so-called thrombo-embolic colics.

Intestinal Nodules

Intestinal nodules are found at different points on the large intestines and sometimes on the small intestines. Their point of predilection however is at the left superior region of the large colon; sometimes isolated and sometimes united in small groups. They are always sub-mucous. The volume varies from that of a pea to the size of hazel nut. They are more or less globular and surrounded by an

(Please turn to page 1071.)

Cattle Section

Parturient Paresis*

By Dr. S. L. Stewart, Olathe, Kansas

AT one time it was thought that parturient paresis was easily diagnosed and easily treated, the prognosis always favorable and the patient sure to recover. But time and experience have taught us many things, and we find that we must change our ideas along the lines of practice, as well as in other lines of modern professions. Therefore, it is desirable to identify the cause when making a diagnosis of disease. So if I should blunder or make a mistake, I hope that you will be considerate and of a forgiving spirit, as you know we are pretty much all traveling the same road of possibilities and you too may falter by the wayside and hesitate on the brink of some great chasm when you are diagnosing an atypical case of parturient paresis. If I should state my ideas in regard to parturient paresis and they do not coincide with yours, please be charitable.

Mortality Still Too High

It is evident that the condition we call parturient paresis is correctly named, but the name gives no clue to the causative factor or the pathology. So again we must delve into the realms of unknown mysteries and grope for the knowledge we are so desirous of obtaining.

However well we may know the treatment of this condition, the mortality is entirely too large and we should attempt to improve our methods.

Believes It a Toxemia

It is my opinion that parturient paresis is a condition brought about by a toxin, which is produced within the animal body and the disease is a toxemia. A toxemia may exist within the body and not cause a complete anemia of the brain and parturient paresis. But if the toxin affects certain cells of the spinal cord a paralysis may appear suddenly. In some cases several days elapse before the final secession of milk secretion and anemia. Along with these it is common to find cases showing gastric fermentation. In some a catarrhal enteritis will be observed and if constipation exists the feces will be covered with mucus. If a diarrhoea is present, and admixture of mucus will be found. Still other cases will be found with a retained placenta and in such cases recovery is more favorable if the placenta is removed.

Taking all these things into consideration leads one to believe that a toxin of some character is responsible for the condition. There are different kinds of toxins, viz: A true bacterial toxin, fatigue toxin, phytotoxin, zootoxin, endotoxin, etc. The specific toxin is of course not identified.

Possibly Anaphylactic

It may be possible that this disease is an anaphylactic manifestation, brought about by a protein originating from the placenta or the uterine glands or from both. The absorption of considerable amount of these substances produces anaphylactic symptoms. This theory can also be greatly strengthened if we take into consideration the cause of antiparturient paresis. But if the anaphylactic theory is correct, then we could attribute the cause of antiparesis to paracrisis, "that is over-secretion or a diminished secretion of the uterine glands during pregnancy." This would finally lead us back to the toxin theory for the abnormal stimulus either secretory nerve cells or the inhibitory nerve cells of the uterine glands.

In all cases of parturient paresis the cow's udder is found to be flabby and non-secretive, which is positive evidence that a paracrisis does exist, and may have existed for several days or only a few hours. If a secretory disorder affects udder secretions, then we are led to believe that a similar condition exists within the glands of the uterus, because of closely related symptoms of parturient paresis and antiparturient paresis. In all cases of parturient paresis which I have examined, the uterus is large and still dilated, indicating that it is involved.

*Read before the Kansas City Vet. Med. Assn. Sept., 1923.

Uterus Involved

As these organs are directly the seat of the trouble, naturally the blood of the body is attracted to these parts and in sufficient amount to cause a sudden fall of blood pressure causing failure of cardial systole, bringing on a faint on account of cerebral anemia. If the udder is tightly inflated with oxygen the blood vessels are compressed and the blood is forced from the vessels of the udder in sufficient quantity to excite cardiac systole and at once a tendency toward a normal blood pressure is restored. Anemia of the brain thus relieved and the cow very soon regains consciousness.

If this theory is correct, then in obstinate cases, following udder inflation, rectal massaging of the uterus is in order. If the cow has recently calved and the cervix has not yet closed an examination should be made, and if any part of the placenta or an unusual amount of fluid remains it should be removed, which will cause contraction of the uterine walls and assist in restoring blood pressure.

In the atypical, acute and subacute cases, the oxygen treatment is sufficient to restore anabolism. In the atypical cases inflation of the udder, uterine massaging, removing the placenta and uterine fluids are in order.

Immunization Against Infectious Abortion

By Dr. Schermer and Dr. Ehrlich

Institute of Infectious Diseases of Animals, Province of Hanover

(Translation by A. Eichhorn, Associate Editor)

THE great interest which is at the present time manifested in the control of infectious abortion induced us to conduct and publish briefly the results of our experiments on this subject. A more detailed publication appeared in The Journal of Infectious, Parasitic Diseases and Hygiene of Domestic Animals.

The demonstration of the Bacterium abortus in the numerous specimens of calf fetuses and fetal membranes sent to us were carried out not only microscopically but also culturally for which purpose all methods of cultivation recommended were followed, the best results however, being obtained on slant agar to which 1% glycerin was added. The agglutination test of the blood proved the most excellent method for the establishment of diagnosis. The most certain method for the demonstration of abortion infection is the inoculation of the susceptible material into guinea pigs in which, however, the most reliable results are not obtained from the cultivation of bacilli from the body of the guinea pig but from the agglutination of the blood of the guinea pig.

Live-Culture Immunization Harmless

The pathogenesis and the course of the disease offer certain lines of procedure in the control of abortion. The abortion bacillus acts only on the gravid uterus. Whereas in the non-gravid animal it causes neither endometritis nor sterility. Bacteriological examination of uteri or sterile cows and agglutination tests of the blood from the same proved definitely that the sterility could not be traced to an infection with the Bang bacillus. Finally vaccinations of thousands of cattle with virulent abortion bacilli proved neither harmful on the breeding efficiency of the animals nor did they produce other pathological changes in the uterus. For the control of infectious abortion caused by the Bacterium abortus we employed aside from the usual hygienic measures, (isolation of the aborting cow, safe disposition of the fetus and its membranes, disinfecting irrigation of the uterus after the abortion, proper supervision of the breeding in order to eliminate the bull as an intermediate carrier), vaccination with various products prepared from abortion bacteria.

On account of the long period of incubation and the insidious nature of the disease, the use of serum which confers only a relatively short immunity was not considered. Inasmuch as under natural conditions an immunity follows in animals frequently only after three repeated abortions, we deemed it advisable to utilize a strong active antigen which promised an immunity of long duration. Such action is attributed primarily to the living organism. Through vaccination with virulent cultures we aimed in producing to a certain extent a repeated artificial infection within a short period of time and at such a period in which the bacterium does not exert a disease—disease-producing action in the body, that is non-pregnant cows and virgin heifers.

Found Non-Pathogenic to Such Animals

We established through a preliminary ex-

periment in which seven heifers from an infected herd were vaccinated twice at fourteen day intervals with the suspension of virulent abortion bacilli and which were bred two months later, that the vaccination did not affect their breeding qualities as all heifers conceived and calfed at regular time. In order to obtain information as to the faith of the injected abortion bacteria we have further injected one sheep, five guinea pigs and two cows and destroyed them at various intervals. The examination established that the subcutaneous injection exerted among the non-pregnant animals only in the guinea pigs a disease producing action and even in these the results were not consistent. The lesions in the guinea pigs were manifested in the form of tubercle—tubercle-like foci in the regional lymph glands and in the spleen which were quite pronounced in six to seven weeks following the inoculation. In those destroyed at later periods no lesions were observed.

Organism Not Found in Milk of Inoculated Subjects

The question whether subcutaneous injection of the living organisms result in their elimination with the milk was also of great importance to us. For this purpose we vaccinated four cows with suspensions of living cultures in strong concentration but failed to demonstrate abortion bacteria in the milk in examinations lasting for several weeks. The milk was tested both culturally and also by animal inoculations (testing of the agglutinin contents of the blood of inoculated guinea pigs). It is not the intention with our findings to attempt to discredit the results of other authors (Swick, Krage, Schroeder and others) who demonstrated the elimination of the organism with the milk in cows artificially infected. However, it appears to us that the elimination of the living organism with the milk following subcutaneous injections are of no practical importance for the reason that the inoculation with living cultures occurs only in herds in which the infection is already established. In such herds a persistent elimination from infected animals is evident whether this occurs with the milk or with the vaginal discharge.

In view of this fact and on the strength of our preliminary experiments, we vaccinated the non-pregnant cows of infected herds systematically with living cultures. We utilized as a vaccine a well overgrown slant agar culture in 10 cu.cm. of physiological salt solution and the injection was repeated in from ten to fourteen days. In order, however, to confer also to pregnant cows a certain degree of protection against the infection they were vaccinated in a similar manner with killed cultures. The organisms were killed by heating them at 52° C for one hour as we have established in a series of experiments that this temperature which is still under the limit of coagulation of the proteins, is sufficient.

Cows Bred Shortly After Injections Did Not Abort

With the killed cultures the pregnant animals were injected during the first half of the pregnancy as we have accepted that the already advanced infectious process in cows during the second half of pregnancy would not be favorably influenced by such an injection. Repeatedly, however, owners insisted on having the animals vaccinated even during the second half of pregnancy. For this reason we have produced even a third vaccine for animals in advanced pregnancy. For this purpose we utilized extracts of old bouillon cultures of the Bacterium abortus as such are readily absorbed and in view of the slight protection which such products induced, the injections were repeated frequently once a month until the termination of the pregnancy. We consider the vaccination with the killed cultures and with the extracts only as a temporary relief and great stress was laid that the animals injected with this product should after parturition without exception receive injections with living cultures. The animals which received the living cultures were invariably bred only six weeks after the injection although according to our observations we failed to observe cases of abortion in animals which were bred shortly after the injections.

Immunization of Bulls Less Essential

The vaccination of the bulls we do not consider as an absolute necessity as infections in the male animals are rare. We do not desire, however, to underestimate the part the bull plays as an intermediate carrier.

Live-Culture Injections Produced No Disturbance in Health

In compiling the results of the vaccination against abortion, we want to emphasize that no noteworthy reactions or disturbances in health or sterility followed the injections. Although we are not in a position to offer a sufficient number of control animals for comparative purposes, our experiments are nevertheless sufficiently conclusive, inasmuch as

they include a great number of animals and also the use of two different vaccines. Thus in the year 1919—420, in 1920—1171, in 1921—5431 animals were vaccinated with our product. Those which received the living cultures carried their fetuses with a negligible exception to normal time. The cows which in infected herds have aborted in spite of the vaccination proved that they have in most instances previously aborted.

Killed Cultures Less Effective

Of the cows which received the killed cultures a larger proportion aborted than those which received the live cultures. Among these were probably included those which at the time of the vaccination were infected and have already developed more or less pronounced disease changes of the fetal membranes. In comparing the results from the immunization with living and with killed cultures a very marked advantage was found in favor of the former. In compiling the results of 14 infected herds they showed in the year before the vaccination 19% abortions, whereas following the vaccination of those which received living cultures only 2½% aborted; of those which received killed cultures 8% aborted.

These results offer sufficient proof that the vaccination with virulent cultures shortened the course of the disease in a herd. In all other herds where the vaccination was undertaken with our living vaccine the same uniformly satisfactory results were observed. We, therefore, consider that the immunization with living cultures of the Bacterium abortus is the most promising method of controlling infectious abortion.

Speaking on abortion disease at a recent veterinary meeting Dr. C. P. Fitch said, "There is no royal road looking toward the conquering of this infection. It is going to be a long, hard pull."

In Vol. 81, No. 12, of the A. M. A. Journal, is a splendid article dealing with trans-uterine gas inflation. In this article there is reported the outcome of the use of carbon dioxid gas pressure. The purpose of carrying on this work was to ascertain the condition of the Fallopian tube. By this technique, it seems the authorities, "Peterson & Cron", have successfully cured several cases of sterility in women. This line of treatment should be carefully investigated by the bovine sterility specialist.

MILK FROM A COW AFFECTED WITH LOCAL GARGET

I would like your opinion as to whether or not milk from any part of a cow's udder should be passed for consumption when one quarter is affected. I am a milk inspector and have condemned the milk of such a cow against the dairyman's opposition. Was I right or wrong?—Wyoming.

Reply: The milk of such a cow should not only be condemned but the cow should be segregated until cured and her milk destroyed, not only to prevent all of the milk from contamination but also to prevent spread of the disease to other cows. In the stern handling of just such cases the milk inspector becomes a valuable man to the public and at the same time makes the careless dairyman realize that he too has a role to play in making milk a more popular food, and that his personal indifference to the public welfare is harmful to the dairy interests.

DELAYED DELIVERY OF TWIN CALF

On September 17 I removed the adhered afterbirth from a pure bred Shorthorn cow four years old. She had delivered a calf the previous day. The membranes came away nicely and the cow did fine, showing no distress nor evidence of anything being wrong. Six days later however she delivered another calf while the other one was standing by her side. It was first thought to belong to another cow, but the dilated cervix and bloody vulva identified the mother. Where was this calf hiding?—Indiana.

Reply: The circumstance while somewhat rare is not unique. We have seen similar cases wherein the interval between the delivery of twins was even longer than six days. The calf was not hiding. It was right there in the other horn but not detected, in other words, overlooked. The fact that the querist is a capable, outstanding general practitioner makes the error in diagnosis more interesting than the case itself. It exposes human falibility and teaches the importance of always "looking for something else" in handling even the simple, everyday conditions met in practice, and once again confirms the wisdom of the old teachers when they admonished their students to examine the foot even if the horse was suffering from a broken leg.

Small Animal Section

Black Head of Turkeys

By Assistant Professor Jean Verge, Alfort, France

ENTERO-HEPATITIS is a virulent, contagious and almost always fatal disease when it attacks turkeys. It is characterized by special lesions of the liver and of the intestines, the cecum in particular.

The rapid spread of the disease in an infected establishment, the alarming contagiousness, the uncertain etiology, the quasi-fatality of the prognosis, and the ignorance as regard to the treatment, makes this disease one of the most difficult to diagnose and to combat.

In the United States, where is has partially annihilated or rendered impossible the raising of turkeys over large regions, the losses are millions of dollars annually.

Synonyms. Amebiosis of turkeys; perityphlo-hepatitis (Lucet); black head (American authors).

History

The disease was first reported in North America under the name of entero-hepatitis by Theobald Smith in 1894, and has been the object of numerous publication in the United States since that time. It was found in Germany by Klee and has been well studied in France by Lucet (1896-1897) and by Charmoy (1912).

Parasitology

The cause of the affection is not yet definitely elucidated, the following theories opposing one another:—

1. **The parasite is an ameba.** Most of the authors relate entero-hepatitis to a protozoan pathogenesis. This is the ameba of turkeys or the Entameba meleagridis which is found constantly on microscopic examination of the lesions of the liver and walls of the cecum.

2. **The parasite is a leukocytozoa.** Laveran and Lucet signalized in 1905 in the liver of turkeys dead from entero-hepatitis, a sporozoa which they found existing with the Ameba meleagridis, and to which they gave the name "Hemameba Smithi."

The Hemameba Smithi is oval, measuring 14 microns long and 8 microns thick, elongated and attenuated at the two poles. It was found in the leukocytes of the liver. This is no doubt the leukocytozoa which Smith found in his studies, without however recognizing it. It is not possible at this time to define its pathogenicity, but it seems to be only an associated organism.

3. **The parasite is a coccidium.** Cole and Hadley since 1910 have contended that black head is provoked by coccidiosis of the chicken (Eimeria avium) and that the ameba of Smith represents only an intermediate schizogonic stage of the development of the coccidia.

Recent researches undertaken in America with sparrows spontaneously affected with coccidioses have permitted Smith and Smillie to deny all relations between the Eimeria avium and the Ameba meleagridis and to show that coccidiosis is not the cause. However, the possibility of a mixed infection, occasioned by these two parasites has been admitted.

4. **The parasite is a flagellata.** Hadley has tried to prove since 1916 that the disease is due to neither an ameba nor a coccidium, but to a protozoan, that can be classed in the genus Trichomonas, a normal inhabitant of the intestinal tube of turkeys, which under certain condition invades the intestinal walls, liver, spleen, kidneys, pancreas, etc. The development and exhalation of the virulence is favored by every diminution of individual resistence, lesions occasioned by worms, or certain digestive troubles (diarrhea, constipation, etc.)

Tyzzer, in the light of researches made in 1920 endeavored to show that the Ameba meleagridis by its characteristics belonged both to the ameba and flagellata and proposed a new species: Histomonas meleagridis which he defined as follows: Pleomorphic protozoan, family Tetramitides, with phases of development in the genus Ameba. No confirmation has, however, been given to this view by other authors.

Species Affected

Turkeys, young and mature, constitute among domestic fowl the species most severely attacked in the course of natural infection. It

however, also affects chickens, chicks, quail, and grouse. (A high degree of immunity seems to be established at the age of nine months to one year.—Ed.)

Symptomatology

The symptoms manifest themselves most commonly in turkeys between the ages of 15 days to 6 months. It is seldom seen under the age of 13 days, and the most critical period is at the age of 35 days for turkeys and from the second to the fifth week for chicks.

There is an acute and a chronic form. In the acute form the affected bird becomes less alert, are weak and trail behind the flock. The appetite is diminished and feed hunted for with less activity. The subject stands in corners, with wings drooping, the back arched and the head hanging. The plumage loses its luster and is soiled with dirt and excrement. There is still no fever.

Soon, however, all nourishment is refused and the attack takes on an extremely grave character. The turkey refuses to move, the weakness augments, and at the same time a yellowish or whitish-green diarrhea agglutinates the feathers about the vent and may sometimes obstruct it. The loss of flesh is considerable, and at this phase attention is attracted to the color and aspect of the head, particularly of the combs and wattles which become grey or black (black head). Besides they wither like a boquet of flowers left without water for a few days. The terminal phase is characterized by a prostration that is absolute, the death following a state of coma. The duration is ordinarly two to three weeks.

The chronic form is rare. In this form the birds are feeble, emaciated, stunted, have no economic value, and die slowly of cachexia. The duration of this form may be a year.

Mortality High

Cures are exceptional, both in the acute as well as the chronic forms. In the few cases that do not die during the acute phase the convalescence is long and uncertain and often marked with relapses which may result fatally.

The Lesions Postmortem

The essential lesions are on the liver and ceca, although eratic locaization have been reported on the kidneys (Kaupp), on the pancreas (Charmoy), etc.

The ceca, which constitute two diverticula of the intestinal tract are either totally or partially affected. The two may be attacked but more frequently only one contains lesions. The affected cecum is doubled or trippled in volume, in the form of an irregular, bruised-like dilatation, and appears to be stuffed with a false, fibrinous membranes more or less adherent to the mucous membrane. The mucous membrane has lost its characters and the lumen partially obstructed encloses green, odorous feces. The muscular and the serous coats may also become the focus of an abundant, cellular infiltration, and it is not rare to see the affected cecum adhered to the adjacent intestines.

The invasion of the liver occurs through the portal vein. The organ enlarges and presents rounded plaques on its surface, which are well delimited, whitish, yellowish or green, of dimensions varying from the size of a pin head to that of a two-franc piece (American Half-dollar). The large areas are due to coalescence of smaller ones. They are fibrous or caseous.

Treatment. Medication until now has not given satisfactory results. Sulphate of iron 5 centigrams (1¼ dr.) a day per bird, alone or with sulphur 20 centigrams (5½ dr.), salicylate of sodium (5 centigrams) benzonaphol or salicylate of bismuth are remedies recommended. The drinking water may be medicated with salicylate of sodium, 10 centigrams per litre (2½ dr. per quart); sulphate of iron 20 centigrams per litre (5 dr. per quart); or with catechu. (Beaudette recommends 10 grains of catechu per day per bird.)

Prophylaxis

The etiology of the disease being contradictory, the methods of prevention are uncertain and obscure. They follow the idea, supported by most authors that the disease is caused the ameba.

All the turkeys of the barnyard should be destroyed; and repopulation should not be attempted until complete disinfection is carried out, with mercuric chlorid 1-1000; cresyl 2%; phenol 5%; or sulphate of iron. The excrement should be destroyed with sulphuric acid; and the walls and perches white-washed with lime. The ground of the barnyard should be maintained dry, as the ameba does not resist dessication.

Hatching eggs should be wiped with alcohol, 80 proof, before incubation. Turkeys should be raised away from the adults or other fowls of the farm as much as possible, and on dry non-infected ground. The most rigorous cleanliness, pure and varied feed, and protection against external parasites are a partial guarantee of success.

However, Hadley, has shown that turkeys can be raised without loss on contaminated

ground, providing the feeding is done as follows:—restricted ration of grain and abundance of sour milk. The treatment of intestinal worms will also reduce the mortality (Snith and Graybill).

Conclusions

Only a reproduction of entero-hepatitis by inoculation with pure cultures of the various parasites incriminated will solve the etiological problem.

The fact of transmissibility from turkey to turkey by subcutaneous injection of hepatic lesions is not sufficient to elucidate the obscure points, since the products inoculated contain a number of more or less pathogenic species (ameba, coccidia, flagellata) whose proper role remain undertermined.

It is probably, after all, that other diseases are confounded under the name of black head; one for example, being caused by the ameba, while others may find themselves dependent upon the coccidium or the flagellata.

Comment. There is no disease affecting farm fowl of more economic significance than black head of turkeys; nor is there any affection of these animals more discouraging to combat. The veterinarian at this season of the year who practices anywhere in the Southern, central and midwest states is in constant consultation with the discouraged housewife about the ravages of a fatal disease that is killing the young turkeys almost as fast as they return to the barnyard after a summer of foraging and roaming in the fields. Turkey raising with hens of the barnyard is now known to be a hopeless enterprise; all of them die from this fell affection before they grow very old. The only ones saved as infants are those hatched with turkey hens which take their little brood out into the open fields when very young, or hatch them away from the barnyard and raise them to maturity on the non-infected terrain of the open range. In the late fall when those of these roamers which have escaped the ravages of other enemies (hawks, crows, skunks, etc.) are driven back to the barnyard by hunger, they too begin to sicken and die with appalling rapidity. The morbidity among these is usually 100%, and the mortality almost as high. The few which survive remain stunted invalids and are therefore worthless.

Assuming that the protozoan theory is correct, and that the parasite lodges in the ceca, traverses its mucosa and then gains the liver through the portal circulation; knowing from clinical observations the facility with which the infection is transmitted when healthy birds are placed on infected terrain or exposed to adults which have escaped an epidemic; and in view of the poor prospects of discovering a system of artificial immunization, it would seem that the only hope of the turkey industry lies in the possibilities of an intensive, antiseptic medication of the digestive tract, affective as such, and continued until the natural "age-immunity" is established. If Hadley's sour-milk and low grain diet which is known to give a fair degree of encouragement could be augumented by some practical system of administering an antiseptic that will destroy or attenuate the virulence of the infectious material ingested, there is still hope of a means to a much desired end.—Editor

(Excerpt from Revue Generale de Medicine Veterinaire, Aug. 15, 1923.)

PROBLEM IN CONTROLLING RABIES IN RUSSIA

On account of lack of statistical data on the number of rabid dogs, the extent of rabies in Russia can be estimated only from the report of the rabies vaccination institutes. These establishments (Pasteur Institutes) have increased during the ten years prior to the war at an annual average of two or three. The number of vaccinated persons has continuously increased. In 1904, 16 such establishments were in operation in which 15,707 persons were vaccinated. In 1913, 29 establishments were active with 41,688 vaccinations. Most of the establishments (7) are located in the more thickly settled parts of the Ukraine, Bessarabia and in the Crimea. The third of the total number of vaccinations in Russia were carried out in the Ukraine. In the bacteriological Institute of Kiew 7,000 bitten persons were vaccinated in 1916.

The national economical importance of rabies is further evident from the great loss of time resulting from the attendance of the institute during the vaccination period. According to the data of the Institute at Kiew the average number of vaccination days for each patient is 17.9. The average number of days which the bitten persons and sometimes their accompanist spent in the Institute is estimated at 19.4 days. Prophylactic measures must in the first place be adopted and carried out with special stringency, in the centers where rabes is most widely spread, that is in the thickly populated localities.

It is noteworthy that about 10% of the vaccinated persons were not bitten, but were ex-

posed by coming in contact with the infected animals or their saliva, especially with large animals (horses, cattle) or man. Experimental data and also casualties in man show that this group of exposures must also be given due attention.

Mortality High in Face and Head Bites

Out of 37,151 vaccinated bitten persons, 0.6% died. The largest number of fatal cases resulted among those which were bitten on the face and head (4.47%). The incubation and infection depends on the location of the bite and from the degree of the wound. In cases of bites by wolves, the mortality was 13.46 per cent, by dogs 0.6 per cent, by cats 0.26 per cent. While the vaccination against rabies reduced the mortality in man to a tremendous extent, it has however no effect on the control of rabies. This must be effected by prophylactic measures, primarily with veterinary police measures against dogs which are the prime causes in the spread of rabies. In the control of rabies, therefore Russia must first of all inaugurate legislative measures for the control of rabies in dogs similar as that instituted in other countries.

(Dr. L. Poleff, Deut. Med. Woch, 1922.)

Bee Diseases

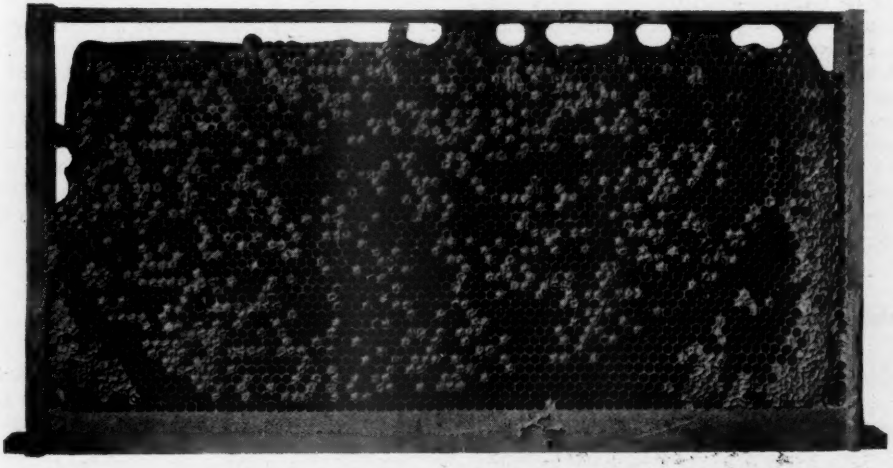
By T. A. Kragness, Chicago, Illinois, Chief Bee Inspector of Illinois.

The story of the honey bee is inspiring, for here is a domestic animal that works hard, boards itself, and leaves a good surplus for its keeper, and if it were not for the contagious diseases, the bee-keeper would have little to worry about.

food the stronger colonies become infected by going into the infected hives to steal it.

There are two classes of disease with which the bee-keeper has to contend: Those which attack the flying bee and those which attack the brood. The latter are known to the bee

COMB OF AN INFECTED BROOD



—Photo by T. A. Kragness.

(Notice the depressed cappings of the cells throughout the comb, especially severe at the lower right margin of the figure.)

Contagious diseases spread rapidly among bees for the reason that during a shortage of food (honey) they are disposed to rob one another and thus scatter contagion about the apiary and to other apiaries. As the bees of infected colonies are too weak to protect their industry as "foul brood," of which two kinds are recognized: American Foul Brood and European Foul Brood.

Greatest Loss from American Foul Brood.

American Foul Brood is distributed throughout the United States and is the most impor-

tant of the bee diseases. It is caused by the Bacillus larvae a very prolific bacillus that rapidly consumes its media and sporulates, and it is upon the spores formed that the treatment is directed. The bacillus itself is easily killed but the spores are highly resistant, withstanding boiling for 10 minutes, 5% phenol for 30 days, and mercuric chlorid indefinitely.

Symptoms

The first evidence of this disease in a hive is the loss of plumpness of the bee larvae. The capping of the affected larvae sinks in the middle and become brownish in color. The larva dries down to half its normal size, in this stage the content of the cells is ropy. If a match or tooth pick is inserted into the cells and withdrawn the contents will string out often to the length of two inches. The drying process continues until there is nothing left in the cells but a scale-like sediment at the bottom of the cell wall. Miscroscopic examination of this sediment reveals the millions of spores of the B. larvae it always contains. In the order of their occurence the symptoms are: Loss of plumpness, brownish color, ropiness and finally drying up, of the larvae.

When dried down to a scale the larvae can not be removed from the cells on account of being adhered to its walls. If attempt is made to remove the dried larvae the cells will break rather than separate from them. The scale can best be observed by holding the comb before a bright light when it will be found to appear like brown glue.

The infected larvae usually die soon after sealing but some may develop into pupae. The bees remove the cappings of affected cells and the debris of this work is found spread about over the top of the combs. The presence of such debris over the comb is an evidence of the disease.

It seldom attacks drone or queen larvae, the disease being confined almost entirely to the worker brood. The disease occurs throughout the entire breedng season.

Treatment

The treatment consists of handling the spores (which as above mentioned are very resistent) and the debris adherent at the bottom of the cells which harbor them.

The first step is to remove the affected comb and give the bees a new one to start off the new brood, and to remove the honey, as it is also infected with the organism. Then as the honey in the honey sac of the bees is also contaminated a certain time must elapse before they are allowed to feed the new brood in the new combs. It requires about three days for bees to consume this honey and become safe feeders of the new larvae. To these ends, the bees of the infected colony are smoked just enough to keep them quiet and shook into a new hive in obedience to a special technic; all infected combs and all new comb being built is burned; and the body of the hive well scorched with a blow-torch or other flame. Preventive as well as curative measures must be kept in mind throughout. Care must be exercised not to purchase infected bees, hives, or supplies that might have come from infected apiaries. No old combs should be used and no honey fed whose history is not known, and finally notice must be taken of the existence of the disease in other apiaries of the neighborhood owing to the roaming robbing habits of bees.

"Marshall" MacKellar and Staff on the St. Lawrence, August, 1923.

Right to Left: "General von" Meucke, "Colonel" Butterworth, "Major" Risley, "Captain" Holtz, and "Private" Incog.

ENUCLEATE THE EYE BALL

A Boston terrier was hit in the eye with a stone about three months ago. The owner, thinking the injury would heal did not have it attended to with the result that the eye-ball has become about twice the normal size. Would it be best to aspirate the fluid accumulated in the anterior chamber and then use some astringent to shrink up the cavity, or to ablate the globe.—Montana.

Reply: The best procedure to employ in such cases is to remove the entire contents of the eye-ball by making an incision encircling the cornea-sclerotic margin, in other words enucleate the entire contents. This always leaves a better looking orbit than ablation. Aspiration would not do. The globe will fill up again, and if injected with most any kind of medicine the pain would be excruciating.

SMALL DOSES OF ARECOLIN SOMETIMES FATAL

This is in the nature of a confession, hoping that it may save some one such agony. A friend of mine who was a fancier of Airedales had been having several cases of fits in his kennels. I prescribed arecolin hydrobromid. It was administered in one-fourth grain doses to three full grown Airedales and in an hour all three dogs were dead. He called me on the phone the next day and told me the accident if we may call it such. I was amazed as I had never heard of such an occurrence before. Luckily the dogs were some that he had intended to destroy eventually as there was no sale for them and he had too many in the kennel. I immediately procured the tube in which there were two doses remaining and procured two stray dogs from the dog pound. These animals weighed about thirty pounds each. At 11:45 A. M. they were each given one-fourth grain of arecolin from this tube and in about thirty minutes collapsed after severe convulsions accompanied by profuse bowel movements. Evidence of intestinal colicky pains before convulsions occurred. At 1:00 P. M. one dog was dead and the other dying. The living animal was destroyed. These animals had not been fed for twenty-four hours. In the bowel movements of each there were great amounts of T. cucumerina; probably sufficient from each to fill an 8 oz. graduate. The tube of arecolin was old and had evidently been in stock for some years. It was furnished by a pharmaceutical firm whose name I had never encountered on an arecolin label before or since.

Proves Fatal in a Colt

In connection with this fatality it brings to mind the death of a colt on Long Island some years ago. Death occurred in this case from a dose of arecolin hydrobromid. At the resultant discussion of the death at a meeting in New York City, the writer remembers the stand taken by one professional member who stated that the administration of arecolin hydrobromid was dangerous inasmuch as its potency and dosage was extremely difficult to ascertain in the preparation of the drug in tablet form. As to the truth of this statement the writer is ignorant. The disheartening experience fazed me for a time and I was inclined to be suspicious of all arecolin hydrobromid.

Prefers Santonin and Chenopodium for Ascarids

However, it is only fair to state that now I am using it regularly with excellent results as a taenicide but am very careful to see that the tube is fresh and not from supplies of unknown origin. I regret to state however that the drug has not given as satisfactory results in the treatment of ascariasis as santonin and oil of chenopodium. A combination which gives excellent results as a vermifuge where the exact parasite responsible is not determined microscopically is a combination of arecolin hydrobromid, santonin and milk sugar in a capsule. This has lately been adopted by the writer as a usual prescription for the average case.

(Excerpt from Veterinary Bulletin, U. S. Army, Lieut. Conant, V. C.)

COMPLICATION FROM ABLATED GOITER

I am sending by parcel post a sample taken from an enlarged under jaw of a dog. It is about the same as a cold abcess. The owner claims this dog was operated on about one year ago for goiter, and this condition has been here since. He has had this fluid taken away with a trocar by another veterinarian here once a month since and iodin injected. If you can give me any help on the subject I will be much obliged.

This does not seem to hurt him in any way. How would you go at it to get rid of it?—Wisconsin.

Reply by A. A. Leibold: There is no doubt in my mind but what the thyroid gland or at least a portion of it is still present in the dog's neck and that the fluid you submitted is "colloid material" secreted by the over-active thyroid which is really in a hypertrophic condi-

tion—probably falling into the classification of colloid distension of the follicles. This can be referred to as goiter.

As for treatment: Internal administration of potassium iodid in moderate doses over a period of a month or so is usually of decided help, particularly if the dog is young; painting the outside with tincture of iodine is also helpful. Partial removal of the gland through surgery is often practiced and followed by good results.

IS "FRIGHT DISEASE" A SPECIAL ENTITY

I would like to have some additional information as to the nature of the new convulsive disease of dogs that has been described in the journals under the name of "fright disease". Several cases have occurred in my practice recently and as I have never heretofore treated many dogs would like the opinion of your experts on the best treatment.—Illinois.

Reply: Fright disease is neither a new disease of dogs nor is it a convulsion. A convulsion is a series of violent involuntary contractions of voluntary muscles, and can hardly be applied to a condition wherein a dog will howl, and run amuck with a free use of its locomotory apparatus. And again it is not a new disease. We have treated "fright disease" in our practice for more than three decades. The publicity recently given to this condition is merely an evidence that veterinarians, previously concerned only with horses, are now busily classifying dog ailments and studying them more closely than formerly, just like they no longer call all swine diseases hog cholera, or like the old veterinarian of the 18th century who pronounced nearly every febrile disease of horses distemper whether it was glanders, influenza, mange or strangles. If a dog had taken a fit or had run away in pain in Bloomington a few years ago no one would have been interested enough to investigate the cause. Now, however, with dog practice becoming an inducement, veterinarians are more inquisitive and investigate the cause and the nature of such conduct on the part of a dog.

We are yet to be convinced that the "fright disease" of the moment is a definite entity and that there are not several conditions confounded with one another in the various reports which have been recently published. There is no more reason in pronouncing all agony manifested by running about a definite disease of the dog than to attribute all of the colic gymnastics of horses to the same cause. It seems from the array of information arriving about "fright disease" from different veterinarians and from many different localities that we still have something to learn about the various conditions which will make a sick dog at large roam about.

The fact that many of the cases reported are young dogs between the ages of 4 and 9 months seems to indicate that the "rage dentaire" (dental rabies) of the French authors may account for at least one group of these cases.

The treatment is to find the cause and remove it.

BLOOD CORPUSCLES OF THE CAT

The red blood cells in the cat vary in size (3.2 to 7.5 microns). "Money roll" formation occurs frequently; likewise mulberry forms. Polychromatophilia occurs only rarely and only in individual cells. Erythroblasts do likewise not occur frequently. The average number per cubic centimeter is 7.5 to 11.5 millions.

Hemoglobin contents: Between 72° and 90°. It is the highest in large adult female cats. Leukocytes: they number 8,600 to 11,400; the number is the largest in very young and the lowest in adult male cats. Lymphocytes are present in from 20 to 35 per cent. Morphologically they are larger than the erythrocytes. The nucleus is as a rule spherical; sometimes indented. Perinuclear court formation as well as azurephile granula may be sometimes demonstrated in the protoplasm. The polymorph nucleated neutrophiles occur in about 55 to 62 per cent. They are of considerable size up to 12.5 microns. The plasma is frequently very finely granulated, the nucleus of the varied shape.

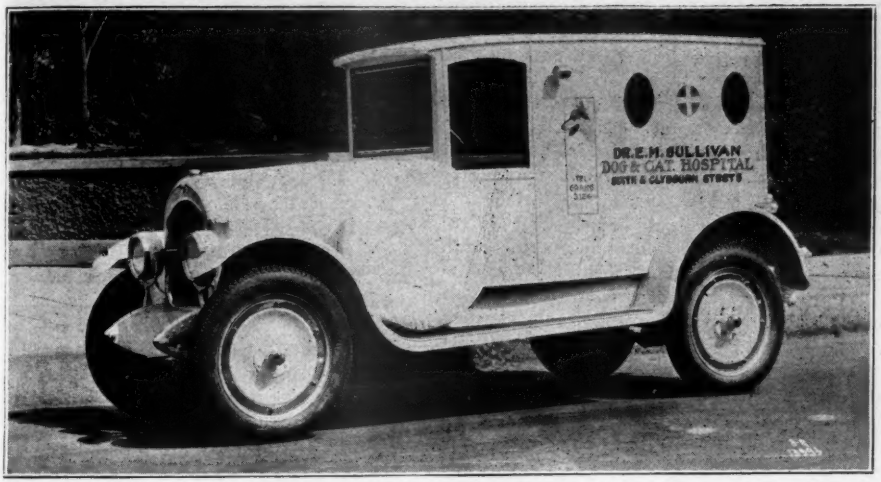
Eosinophiles Numerous in Parasite Infestations

The eosinophiles were found in a 2 to 5 per cent ratio. In a healthy cat which was infested with parasites they were found in 13.37 per cent. The eosinophiles are very large; their granules are very coarse and either round or rod shaped. Both kinds of granules may however, occur in the same cell. The basophiles (mastcells) are very rare, on an average of 0.17 per cent. Of monocytes about 2.68 per cent were counted, their plasma is basophile, granula are not present.

Blood platelets are quite numerous and of varied shapes (round, oval, elliptical and lonated). Sometimes isolated platelets are larger than red blood corpuscles.

(Tier, Arch. 1922, No. 9.)

A DE LUXE SMALL ANIMAL AMBULANCE.



Dr. E. M. Sullivan, of Milwaukee, Wisconsin, operates in connection with his practice what seems to be the last word in an ambulance, for small animals. The chassis, body and equipment were designed and built expressly for the purpose, by the Parker Motor Company and the Barco-Body Company of that city.

Under the driver's seat, which is hinged, is a box for instruments and on the side of the seat is an emergency case for first aid service. Behind the driver's seat are windows which give a view of the interior of the ambulance.

The interior contains a kennel padded with a removable mohair pad; and a cat bed suspended on springs from the ceiling. The space behind the kennel and cat case is carpeted with oil cloth, making in all an assemble.

The greater the number of animals kept upon a given area and particularly if they are overcrowded, the greater the danger of infections and parasitic diseases.

"Worming" dogs with santonin, arecolin and sugar of milk, in capsules is recommended by Lieut. Conant, when the identity of the parasites can not be determined.

A bitch will not disown her puppies after cesarean section deliveries if allowed to see and smell them as she is reviving from the anesthetic.—Baldwin and Goveland.

Cats are more susceptible to ulcers than any other one of the domestic animals, and frequently they are tuberculous.

A greater therapeutic effect is obtained from a large single dose of the various arsenical preparations used in the control of protozoan infections involving the central nervous system than from smaller doses administered more frequently.

Bacterium coli is capable of producing a diseased condition in fowls that may be difficult to differentiate from fowl cholera. This infection usually occurs in fowls that have had their resistance diminished by insanitary surroundings, improper feed or water and by undue exposure.

Chicken cholera and fowl typhoid are clinically similar diseases. It requires a laboratory examination to differentiate them.—Graham.

ACCREDITED CHICKEN FLOCKS

It will not be controverted that the State of Illinois is the parent of the accredited-herd plan of eradicating bovine tuberculosis. It was here that former State Veterinarian O. E. Dyson initiated the thought, and it was here the movement received the first impetus. The accredited herd idea at first conceived only tuberculosis-free pure bred herds, but it soon proved to be such a sensible departure that grade or mixed herds were also included in the movement; and finally whole districts are being swept free of tuberculous cattle, with the prospect of enlarging them (before it is too late) to a vast territory if not to the whole country. The departure has not only disposed of many menacing bovines, but it has had other good influences. It has given a better idea of the prevalence of bovine tuberculosis among our cattle herds; it has facilitated the exchange of breeding animals; it has given cattle owners more confidence in their enterprise; it has brought about a better attitude toward eradication programs; it has had a stupendous effect on the sale of milk products; it has brought the question of milk hygiene before the people; and besides it has had a remarkable influence in curtailing losses other than from tuberculosis which arise from the insanitary conditions the accredited-herd regulations correct.

Now, Illinois proposes to have accredited chicken flocks—accredited as being free from bacillary white diarrhea. Dr. Robert Graham of the state university and Dr. F. A. Laird, state veterinarian, cooperating with the Illinois State hatchery association, have instituted measures to that end which at this writing are already in operation on a promising scale, and those in a position to know pronounce the movement as one of signal importance.

The regulations agreed upon and which will henceforth be enforced include the elimination from flocks all birds reacting to blood tests, and the charge of five cents per bird for the test and five cents for the veterinarian who draws the blood was mutually approved. The plan will be discussed at length at the annual meeting of the Illinois association December 4-5.

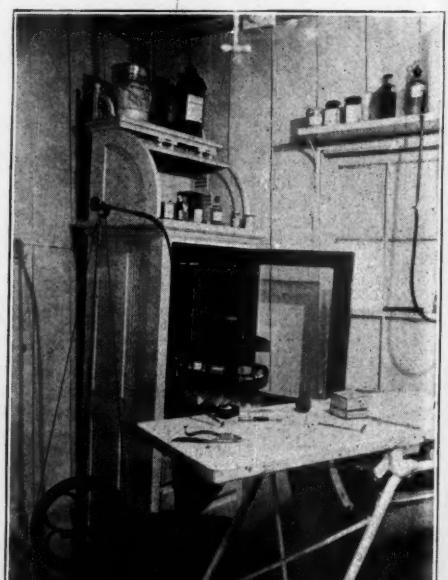
The eradication of white diarrhea from chicken may thus become a reality, first, as in the case of cattle, among the breeders, and later among those interested in the chicken industry in a smaller way, but all to the one big end of bringing sanitary conditions into the chicken coops of the state, which will curb not only one, but all of the chicken plagues.

OTITIS MEDIA (?) IN A SETTER

A client of mine has a valuable setter that has been carrying his head to one side for about a year. The owner being a physician and interested in the disease has helped do everything we could think about to relieve the condition, but thus far we have had no success. There are no visible symptoms of ear trouble.

We have taken X-ray pictures of the head which I am enclosing, but these do not mean anything to me.—Virginia.

Reply: On account of the long duration of the disease we are inclined to exclude brain lesion as the cause of the trouble, and would refer the querist to an article in the April issue on Otitis Media, by Dr. W. F. Guard, that might shed light on this case. Guard washes out the internal ear (after puncturing the tampanum) with a mixture of iodoform, bismuth subnitrate, and liquid petrolatum, in hogs showing an analagous syndrome. It might be worth trying in this case.



—Keystone View Co.

Drs. R. A. and David McAuslin of Brooklyn, N. Y., as the illustration shows are actually equipped to do canine dentistry.

Swine Section

Post-Vaccination Losses

By A. T. Kinsley, Associate Editor

THERE was relatively little hog cholera in the country during the spring and early summer of 1923, and the price of hogs was comparatively low, consequently there was less vaccination done than usual. The encouraging prospects for a large corn crop in June and July stimulated a brisk demand for stock hogs and also encouraged the immunization of the feeder pigs on farms. Since about the middle of July large numbers of swine have been immunized on farms in the central states.

According to reports, losses of swine after vaccination are occurring quite frequently, at least in some sections of the country. Although potent anti-hog cholera serum and dependable virus have been proven efficient in immunizing swine against hog cholera there are still some skeptics. These losses are unfortunate because they present an opportunity to condem the value, use and methods of administration of anti-hog cholera serum.

That antihog-cholera serum is a specific in overcoming or neutralizing the influence of the filterable virus and is of little value in any other disease is well known. A few have advocated that other diseases such as necrotic enteritis and the pulmonary form of hemorrhagic septicemia were modified forms of hog cholera and recommended the use of antihog-cholera serum and although the losses may have been temporarily checked the serum was not effective and after repeated trials in such cases its value even in the control of hog cholera was condemned by some swine producers.

After a careful consideration we submit the following as possible causes of the so-called hog cholera vaccination difficulties:

1st: Swine not in condition when vaccinated and improper care after vaccination.

2nd: Swine in the incubation stage of disease.

3rd: Swine that are contaminated with gas producing microbes obtained from contaminated lots.

4th: Faulty technique of the vaccinator.

5th: Impotent serum.

6th: A virulent virus or virus with diminished virulency.

7th: Diseases that occur after the swine are immunized and probably have no relation to the immunization.

The foregoing factors are not necessarily arranged in the order of frequency of occurrence.

The successful practitioner is one that makes a careful examination of every herd of swine prior to vaccination, in order that he may know the exact condition of the swine at the time that serum and virus are introduced. He who does not make such an examination can not know the condition of the swine and difficulties succeeding such vaccination are prone to occur.

Prepare Swine Before Vaccinating

The condition of swine at time of vaccination is a very important factor in determining the success of immunization. The reaction following the injection of serum and virus in hogs that are properly prepared is usually very slight and frequently unobesrved. If swine are not properly prepared for the reaction, there may be extensive losses due to hog cholera induced by digestive derangement. Swine are properly prepared for immunization by diminishing the feed three or four days prior to vaccination and withholding all feed for twenty-four hours previous to the vaccination. The best results are obtained by using a slop feed during the period prior to immunization. Swine should receive a very limited ration for several days after immunization and the ration should consist of slops, skim milk, buttermilk or other like products. It is very probable that the extraordinary losses that occur in stock pigs are directly due to excessive feeding immediately after immunization.

Proper After-Care Essential

Sixty per cent of one lot of shotes that were apparently healthy at the time of immunization, died within ten days after vaccination and on investigation it was found that these shotes had been kept in a dry lot on rather a meager ration and immediately after vaccination they were turned into a corn field, where digestive disturbances resulted as a conse-

quence of gorging and the excessive loss mentioned occurred.

Carefully Examine Herd Before Immunizing

An apparently healthy herd may be found to be diseased when the history is ascertained and a careful examination is made. Some of the most extensive losses have occurred in apparently healthy swine that were given anti-hog cholera serum and virus on the supposition that they were free from disease. One instance to show the importance of determining the exact condition of swine prior to the use of anti-hog cholera serum and virus will suffice for illustration:

A Missouri practitioner was called to vaccinate one hundred 60 lb. shotes. The shotes were apparently healthy. The practitioner was familiar with the surroundings and assumed that there was no hog cholera or other disease of any importance on the premise, and he assured the owner that there would be no serious effects from the vaccination. This practitioner was surprised on the tenth day after vaccination when the owner of the swine reported ten shotes dead and several others off of feed. On examination of several of the dead ones, the usual lesions that are attributed to the filterable virus were observed, viz: congestion and hemorrhages of various lymph glands, petechial hemorrhages in the lungs, kidney, mucous of the larynx and bladder. In addition to the above, there were extensive lesions of necrotic enteritis consisting of ulcers and an adherent exudate on the intestinal mucosa. Formerly, such finding would be considered positive evidence of a cholera outbreak. Fortunately, the practitioner in this case had vaccinated two other herds of swine in the same community using serum and virus of the same serial number that had been used in the herd in which the losses occurred and on inquiry these herds were found to be in good condition. There is no question but that the loss in this particular herd was in part due to the activity of the filterable virus and the practitioner was at fault for not having identified the presence of necrotic enteritis when the swine were vaccinated. It is a well known fact that swine affected with necrotic enteritis should not be given hog cholera virus.

Hog cholera in the incubation stage may not be recognized by the practitioner unless a careful examination is made in which the practitioner devotes considerable time to actual inspection of the swine and a careful consideration of the history is obtained from the care-taker. Extensive losses may occur as a result of the use of serum and virus in swine in the incubation stage of cholera. In one instance some sixty swine weighing about 100 lbs. were given the simultaneous treatment and two days after 15 of the swine were dead and nearly all of the others showed marked evidence of disease. A careful investigation of this particular herd revealed the fact that the swine were actually sick at the time of vaccination. It is not possible to produce hog cholera in less than four or five days by the use of virus and in those instances in which cholera develops within three days after vaccination, it is practically positive that the hogs were affected at the time of vaccination.

Contaminated Lots and Swine a Factor

Losses are frequently reported in which there are several deaths in from 24 to 48 hours after the administration of serum and virus, and in which there is more or less extensive gaseous swelling at the point of injection. The following illustrates this condition and is a report based upon an investigation of four different outbreaks within a period of eight weeks in two different states in 1920, by Dr. J. D. Thrower. The history and outbreak in each of the four herds investigated were practically the same:

"Within 48 to 72 hours after vaccination, the practitioner would report the loss of several hogs, with 50% or more of the herd showing lameness and general indisposition. Upon arrival on the premises a diligent search for evidences of hog cholera or other associated infectious swine diseases was without avail. The only note-worthy pathological condition observed was a gaseous tumefaction at the site of injection.

"The hogs being apparently well at the time of vaccination, it naturally seemed to both the veterinarian and the farmer that the serum or virus was at fault, since the enlargements were found only at the site of injection.

"Being confronted with these conditions, it was decided to determine if possible the source of anaerobic pathogenic organisms that seemed to be responsible. Several specimens of the diseased tissue were placed in sterile fruit jars and taken to a laboratory. The laboratory findings revealed that suspensions from the tissue produced death in guinea pigs in less than 36 hours, and inoculations in Smith tubes developed an abundance of gas. The anaerobic organisms were recovered from the cultures and were injected into guinea pigs, followed by death in less than thirty hours.

"A bottle of serum of the same serial as that used for vaccinating the hogs, was secured from the veterinarian and subjected to the same laboratory procedure as was resorted to with the tissue specimens, without the recovery of any anaerobic organisms, and appeared to be perfectly innocuous when tested on guinea pigs. This seemed to vindicate the serum, but did not establish the source of the infection.

"A request was then made upon the practicing veterinarians to furnish the laboratory with skin scrapings from the axillary space and the inner surfaces of the thigh of hogs in the infected herds. The desquamated epithelial and skin debris thus acquired was placed in sterile containers and upon receipt at the laboratory, guinea pigs were injected with a suspension, with death resulting in less than thirty hours. Smith tube inoculations with the same cultural and morphological characteristics as the anaerobe recovered from the diseased tissue of swine that had died in this herd, were recovered.

"The causative agent in such cases may be a member of the Vibrion Septique group, the Bacterium Welchii, or the bacillus aerogenes capsulatus.

"It would seem that these facts would justify the conclusion that the causative agent in these outbreaks was on the skin of the hogs at the time of vaccination, and were probably carried in by the needle point at the time it was inserted.

"It is very questionable if the veterinary profession has at his disposal only an efficient skin antiseptic that will destroy these organisms because all of the anaerobes referred to in this connection are sporulating and consequently highly resistant.

"The unused portion of the serum used in each of the four herds in question was returned to the respective laboratories from which they came, with the suggestion that they be used in vaccinating pigs, in order that the results obtained might be carefully observed. This was done in each instance with results entirely satisfactory, as all of the pigs lived in each case.

Careful Technique Necessary

Most practitioners have developed an efficient technique for the administering of antihog-cholera serum and virus, however, an occasional instance arises in which post-vaccination difficulties can be traced to faulty technique. The report of one such instance will illustrate this point.

A practitioner had been called upon to immunize a small herd of swine in the fall of 1917. The practitioner in question had been busily engaged immunizing cattle, horses and mules against anthrax with serum and spore vaccine. This pratitioner did not sterilize the syringe that he had used in administering the anthrax spore vaccine before using it as a virus syringe in the hog cholera immunization. Fortunately only a small bunch of swine were so treated but there was a one hundred per cent loss. In one other instance, a practitioner had used his virus syringe needle to tap an oedematous swelling on a mule and without sterlizing the needle proceeded to immunize 8 pure-bred gilts, each of which developed malignant oedema at the site of injection of the virus.

Serum and Virus Rarely at Fault

With the present regulations for the production of anti-hog cholera serum, there is little opportunity for any licensed serum establishment marketing an impotent serum. If a virulent virus is used in conjunction with an impotent serum there will be evidence of disease in the swine immunized in from seven to ten days and the diseased animals will be found to be affected with hog cholera.

It is possible that a virus may become attenuated, particularly during the hot summer months when subjected to a high temperature for several days in transit or before it is used. A weak or avirulent virus when used in simultaneous vaccination fails to produce a reaction and the swine so treated acquire a passive immunity from the action of the serum.

Generally speaking, antihog-cholera serum and virus is much more constant in potency and virulency and therefore more dependable than is the condition existing in swine when immunized.

Losses May Be Due to Other Diseases

Most any condition may occur in immune swine other than hog cholera breaks. It is not at all unusual to find swine immune to cholera affected with various parasitic disturbances. Such conditions can usually be readily distinguished from hog cholera and should not be reported as hog cholera breaks. Fortunately, the majority of practitioners, some state and bureau men, now recognize the fact that there are some diseases affecting swine aside from hog cholera. It is difficult to make a specific diagnosis of swine diseases. The following gives a brief general statement concerning symptoms and lesions of the most important diseases of swine.

Hog Cholera

Usually only a small percentage of the herd is affected in the beginning of an outbreak; a high temperature, inappetence and a tendency to hide in bedding are symptoms indicating hog cholera. Autopsy reveals congested and hemorrhagic lymph glands, petechial hemorrhages of lung, kidney, bladder and epiglottis.

"Flu"

High temperature, inappetence, tendency to remain in bedding, thrumping, coughing and a large portion of the herd simultaneously affected are the usual symptoms of Influenza. An acute inflammation of the anterior respiratory tract typifies Influenza.

Necrotic Enteritis

Appetite fair to good, diarrhea, unthriftiness, emaciation and temperature 104-105° F., are the usual indications of infectious necrotic enteritis. Enteritis of varying intensity is the lesion that characterizes this disease.

Hemorrhagic Septicemia

Cough, nasal and ocular discharge, thumping, appetite fair and temperature up to 105° F., typifies the pulmonary form of hemorrhagic septicemia. A typical catarrhal pneumonia, with or without pleurisy, are the lesions that characterize this disease.

Swine Erysipelas

Diminished appetite, dullness, temperature 104 to 106; may or may not show locomotory disturbance; sloughing of tail or portion of ears. Autopsy findings reveal very large spleen, tumefied, oedematous lymph glands that may or may not evidence necrosis.

Commander's King, a very promising Poland China boar belonging to Coupe Bros., of Falls City, Neb., died the last of August, as a result of pneumonia, at least the condition was so diagnosed by attending veterinarians. The boar weighed approximately 1100 lbs., and was a most promising individual.

In field work and practice it should not be forgotten that there is a greater variation in the cholera susceptibility of swine in different herds than there is in the potency and virulency of different serials of serum and virus. Likewise, there is a greater variation in the cholera susceptibility of indivdual swine in a given herd than there is in potency and virulency of the different bottles of serum and virus of a given series.

LUNG WORMS IN PIGS

By parcel post there is being forwarded the lung and one kidney from a pig that was farrowed the last of May. This pig weighed about 40 lbs. It showed some disturbance when it was about six weeks of age but it improved and seemed to be practically normal until it was about five months of age. There has been more or less pig trouble on this farm for the past two years and since the first of July this year, the owner has lost 16 head, weighing from 60 to 125 lbs. All the swine on this farm are vaccinated against cholera.

The first symptom noted is coughing. The pig seems to be stiff and evidences more or less lameness. In most of the cases, the pigs seem to recover from the primary attack, but there is a repetition of the diseased condition every three to six weeks. On post mortem, nodular masses are noted in the lung. These masses are found to be encapsulated masses of pus, the pus being of a greenish yellow cast. The nodules vary in size from peas to masses one inch in diameter. There is usually no other lesion present.—Iowa.

Reply by A. T. Kinsley: From your description and the findings of the specimens submitted, it is apparent that the primary trouble in these pigs is due to the migration of the larval ascarid into the lung. This probably occurs in the suckling pig and the infestation is apparently not sufficently extensive to result in death. When the pigs are weaned they become more or less depressed and somewhat unthrifty, due to the change of diet, at which time various microbian infections develop in the injured area in the lung, producing the suppurative centers that you observe when you autopsied the pig. B. pyocyaneus, B. suisepticus and some other contaminating microorganisms were indentified in the lung lesions. These infections are no doubt secondary and will not occur if the primary disturbance is eliminated.

It is probable that if your client will so handle his swine that the possibility of the larval ascarid invasion of the lung of the pig is diminished to a minimum, that the trouble you have described as occurring in this herd of swine will practically disappear.

The United States department of agriculture claims that while hog cholera is responsible for 60% of hog losses, a great deal of the other 40% is due to lack of proper attention in the care of swine herds.

Zootechnic Notes

STATISTICS

Nearly 9 million goat skins were in warehouses in this country June 1, 1923. 1,485,894 were sold during the month of May.

Texas leads in goat population with over 1,700,000, with other states in order of importance as follows: New Mexico, Arizona, Oregon, Arkansas, Missouri, California, Mississippi, Georgia and Alabama.

About 150,000 of improved live stock were secured by farmers in 1922. Over 100,000 of that number are registered and include approximately 8,000 dairy bulls; 15,000 dairy cows; 7,000 beef bulls; 6,700 beef cows; 15,000 boars; 40,000 sows; 9,000 rams and ewes, and 1,000 stallions, jacks and mares.

According to preliminary reports, there are over 37 million cattle in Argentina and approximately 35½ mllion sheep. If these estimates are reliable then it is evident that there has been a marked increase in cattle and a decrease in sheep in that country during the last ten years.

It is not generally known that next to Missouri, Tennessee has the largest number of mules. The exact figures as registered by the federal department of agriculture are 389,000 for Missouri and 352,000 for Tennessee. It is also a surprise that Oklahoma is third with 336,000 and Arkansas fourth with 308,000.

At the beginning of September, 1923, 5,000,000 cattle were under supervision for the eradication ot tuberculosis in the United States. The fully-accredited number 661,260; nearly 3,000,000 have successfully passed the first test; and 145,000 herds are on the waiting list; all of which should convince the doubter that tuberculosis eradication is a stupendous movement.

Goitre is at least six times more frequent in girls than in boys. The majority of cases of goitre in boys is inherited.

FEEDING AND FEEDS

"An important cause of the lack of profits in dairying is in the failure to feed cows in proportion to their milk production or to their ability to respond in production."—Nevens.

It is a sin to sacrifice wheat at less than a dollar a bushel in view of what is now known as to its high food value for both swine and poultry. Although lacking in protein and ash these can be supplied with semisolid buttermilk, skimmed milk, tankage or alfalfa. It should be ground coarse.

The greatest returns are obtained from the dairy cow only when they are properly fed, cared for and managed. From 35% to 65% of the total feed consumed by dairy cows is used to maintain the body without gain or loss in weight. One of the common causes of losses in the dairy industry is the feeding of a ration containing too small proportions of protein.

One-fourth to one-third of the feed and other expenses incident to the keeping of sows until the pigs are weaned is lost by not providing the sow with proper feed and care during the gestation period and farrowing time. More pigs die from improper management than from diseases. The number of thrifty pigs produced per sow is the greatest factor influencing the cost in pork production

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BARREL SILO FOR WINTER GREENS

When greens are wanted for winter feeding on a small scale as for farm poultry an ample supply can be provided by ensiling lawn grass, white clover tops, cabbage leaves, beet tops, etc., in barrels. An old barrel will serve the purpose. A hole is bored at the bottom to let excess fluids escape and a square opening big enough to admit the hand is made three to four inches from the bottom through which to take out the silage, and a door is provided to shut it tight. A lid fitted at the top is weighted down to compress the contents. New material may be added at the top from time to time to keep the barrel full as the silage

is removed from the bottom. One barrel thus handled will supply greens for about 50 hens.

At this season of the year cabbage leaves and beet tops are abundant and can be thus utilized to good advantage.

APPLE POMACE

Approximately 150,000 tons of moist apple pomace are produced annually as a by-product by the manufacturers of cider and vinegar. Pomace has been used to a limited extent in the moist state for food. Only a very small percentage of this product can be used fresh and the bulk of it has in the past been wasted. The utilization of apple pomace depends upon converting the substance into a form that it can be transported. Extensive experiments have been conducted and it has been found that apple pomace may be dehydrated and profitably used as a stock food.

In France during the war, a mixture of 70% of dried pomace and 30% of molasses was substituted for a large portion of the grain ration of the army horses. According to the U. S. department of agriculture, dried pomace is a semi-concentrated feeding stuff of medium protein and ether-extract content, capable of absorbing rather large quantities of water or molasses and is quite useful as a stock food.

BREEDING AND BREEDS

POLAND CHINA SWINE ARE PROLIFIC

E. L. Garrett, of Bethany, Neb., reported that Lady Dunndale, a pure-bred big type Poland China sow farrowed eighteen pigs on August 27th. This and many other reports of the farrowing of twelve to sixteen living pigs by Poland China sows is proof of the value of the selection of breeding animals. Some few years ago, Poland China breeders began the selection of prolific females because of the fact that the Poland China breed had justly or unjustly been criticized for the production of small litters. Pig survey at the present time shows that pure-bred Poland China sows are producing on an average of about ten pigs per litter. Poland China swine are now sufficiently prolific and with this as with other breeds the greatest loss is not due to the farrowing of small litters but is due to excessive losses of pigs between the time of farrowing and the time they are one month of age.

VICE AND DISEASE

It has been estimated that 15 trillion typhoid bacilli would weigh one ounce.

There are constantly over a million people in the United States affected with tuberculosis to sufficient extent to produce evident symptoms.

Dallas, Texas, is in the midst of a rigorous campaign against bovine tuberculosis.

On account of the prevalence of anthrax in South Dakota, Governor Ross of Wyoming, has issued a quarantine proclamation against the shipment of South Dakota cattle into that state.

Although the only effective and reliable means known for protecting animals against blackleg is vaccination with filtrate or aggressin, there are many animals arriving in public stock yards that have been roweled and in many instances wire has been passed through the dewlap to prevent blackleg.

Feather pulling is a vice and may be due to either parasitic irritation, mineral deficiency, idleness, or imitation. The condition is most easily controlled when produced by parasites or an improper diet. Chickens that form a habit of feather pulling will probably have to be destroyed.

W. M. Scott reports through the British Medical Journal that in actinomycosis, vaccine therapy is a valuable adjuvant in the therapeutics, virulent antigens, giving by far the best and most uniform responses.—Ex. Record 48, No. 7, 677.

Brahman cattle are being introduced into Mexico. These cattle are relatively resistant, not only to the fever tick but also other parasitic diseases and are said to thrive better than Herefords or Shorthorn cattle on poor grazing land.

To the Editor:—

The most pleasant events of my professional career since the first day I entered practice is the monthly arrival of VETERINARY MEDICINE.—L. J. T., Nebraska.

B-D PRODUCTS

Made for the Profession

CHAMPION
Veterinary Syringe

for one and two hand manipulation

WE MANUFACTURE TWELVE SIZES
FOR THE ADMINISTRATION OF
ALL TYPES OF

TUBERCULINS
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Makers of Genuine Luer Syringes, Yale Quality Needles, B-D Thermometers, Ace Bandages, Asepto Syringes, Sphygmomanometers and Spinal Manometers

PREPARATION

The Scout for Success

The advertisements in VETERINARY MEDICINE can add much to your personal efficiency. Keep in mind that while the value of advertising is generally considered from the viewpoint of the manufacturer or agent, big dividends are also reaped by the reader—both from educational and economical points.

Certain it is that the advertising pages of VETERINARY MEDICINE are as modern an index as one can find of "who's who" in equipment and materials used by the veterinary paper field. Like Tennyson's brook, their newness "goes on forever". Each issue contains new essential knowledge.

By utilizing your spare moments in reading these advertisements you are educating your judgment. Your regular interest in them will result in an extension of the boundaries of your own capability.

The Editorial Staff

THE HORSE SITUATION

The Gridley Dairy Company declare after a test that a horse and driver can do the work of two men and a truck.

The auto seems to have created an ever-growing desire for luxury and it has taken countless workers away from productive enterprises.

The Merchants Drayage & Transfer Company of San Antonio, Texas, sold their horses five years ago and purchased trucks. Today they are advertising all of their gas wagons for sale and have purchased 40 horses.

Retail dairymen agree almost unanimously as to the superiority of the horse to electrics or autos for house to house delivery. The Bowman Dairy Company use 2,000 horses in their different Chicago branches, the Borden Company use 2,500 in New York City alone.

The advantage of the mule over the horse is his ability to work hard under adverse conditions, and the disadvantage is that this faithful hybrid is unfortunately dependent upon the horse for his existence. A great army of mares must be maintained to keep up mule population of the Cotton Belt which numbers over 3,000,000 head

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And You Never Leave Us Stranded on the Road

"O horse, you are a wonderful thing; no buttons to push, no horn to honk; you start yourself, no clutch to slip, no spark to miss, no gears to strip; no license-buying every year, with plates to screw on front and rear; no gas bills climbing up each day, stealing the joy of life away; no speed cops chugging in your rear, yelling summons in your ear. Your inner tubes are all O. K. and, thank the Lord, they stay that way; your spark plugs never make us cuss. Your frame is good for many a mile; your body never changes style. Your wants are few and easy met; you've something on the auto yet."—H. R. Elliott in American Forestry.

The fourteenth annual dairy cattle congress was held at Waterloo, Iowa, September 24-30.

MARKETS AND OTHER NOTES

Forty per cent of Denmark's population subsists on agriculture.

Kansas supplies the midwest markets with 8,000,000 dozen eggs annually. It is planning co-operative marketing of poultry products, and to accomplish this end convened the statewide marketing conference held at Topeka, in September.

The value of butter produced in the United States in 1921 was approximately $650,000,000 or nearly 6 million dollars greater than the value of the 1921 cotton crop and only 78 million dollars less than the value of the wheat crop.

There is one animal unit to each eight acres of improved land in the state of Kentucky, an animal unit being equal to 1,000 lbs. of live weight. Live stock is essential not only to consume the grass on pasture land, but to supply a system of pasture farming which makes less plowing necessary.

That we are not an entirely independent nation in the matter of meat food products is shown by the fact that we imported 49,847,714 pounds of such products during 1923. Truly, our live stock industry is still an infant, in view of its opportunities.

Although losses of live stock incidental to shipping have been materially reduced, during the last decade they are still entirely too large. For a period of six months in 1922, there was received at nine of the live stock markets of the United States, a total of 28,375 dead hogs and 38,708 that were more or less crippled as a result of injuries incident to transportation. The major portion of these losses can be attributed to carelessness and could have been prevented had proper precautions been observed.

To the Editor:—VETERINARY MEDICINE, I love you for the brand of Americanism you are displaying; for the encouragement you bring me when I have the blues over the way my practice is changing; for the manifold hints you unfold each month; and for the practical position you take on the problems confronting the profession.—W. J. N., Illinois.

THERE IS NO SUBSTITUTE FOR EXPERIENCE

And in the practice of veterinary medicine the above applies.

When you face one or more of the numerous cases that do not present a clear symptomatic picture, of obscure history, incomplete clinical record, then—experience counts.

The same is true with respect to biologics and medicinals. It is experience that suggests direct treatment and Bacterins are probably the most valuable and effective means available for ready administration and quick results.

Experience, too, will determine the brand of Bacterins you prefer—thousands of successful Veterinarians use the Z-S brand exclusively—they accept no substitute for quality either.

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Use Ethical Advertising To Increase Your Income

Advertising will solve your problems by teaching the public the importance of veterinary services. The superstitions, prejudices, and false economies, which operate to keep your business at a minimum, melt away before the power of advertising like fog before the sun.

Advertising Is Telling.

In the case of the Veterinarian, telling in plain, understandable, convincing language why and how he is worth many times more than he actually receives to the individual who employes him, and to the community.

When the public is taught the truth, **the evils of quackery, self-prescribing, and procrastination** in securing needed veterinary service, disappear. Educate the public properly through advertising and they are willing, nay, anxious to cooperate. Advertising will increase the income of the entire veterinary profession and of every individual in it.

THE VETERINARY ADVERTISING AGENCY is conducted by experienced advertising men who are thoroughly familiar with veterinary problems. They are able and ready to put the mighty force of advertising to work to increase the income of the veterinary practitioner in a strictly ethical manner. Through this agency the individual practitioner can secure at a very small cost as good an advertising service as many corporations pay thousands of dollars for.

Send coupon for more information.

Clip along this line and mail

The Veterinary Advertising Agency,
1827 So. Wabash Ave., Chicago, Ill.

Gentlemen: Without obligation on my part please send me more information on your Advertising Service for Veterinarians.

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POULTRY BREEDERS, VETERINARIANS, FARM ADVISERS MEET

On October 10, approximately one hundred representative hatcherymen and poultry breeders of Illinois met at the State House, Springfield, to discuss the advisability of attempting to standardize the quality and type of day-old chicks in Illinois. The advantages of such a plan were pointed out by hatcherymen and breeders of Wisconsin, where the day-old chick business is officially supervised by the bureau of markets at Madison.

In connection wth the problem of accrediting hatcheries and flocks for quality and type of product produced, the question of accrediting flocks free from bacillary white diarrhea was discussed as an independent issue by Dr. F. A. Laird, state veterinarian. Regulations for the control of this disease were outlined by the same speaker and as a result, rules were adopted to assist owners in developing flocks free from this disease. Flocks free from bacillary white diarrhea, as shown by two repeated negative agglutination tests, will be certified as free from this disease by the state veterinaran. The certificate may be revoked at any time pending a violation of the rules prescribed to maintain the flock free from infection or on the appearance of the disease in the flocks. The agglutination tests for officially accredited flocks will be handled by the laboratory of animal pathology and hygiene at the University of Illinois.

A flock to be accredited must be under the supervision of the state veterinarian, while an accredited veterinarian will be designated to draw the blood samples, supervise the disinfection of the premises and the removal of reactors from the flock. Tentative regulations which will guide the veterinarians and flock owners relative to accrediting flocks free from bacillary white diarrhea may be obtained by writing to Dr. F. A. Laird, state veterinarian. Springfield, Illinois. Blood samples may be collected for test by laymen, but these flocks will not be officially recognized or eligible for the accredited list.

Gideon Wells describes the influence of heredity on the occurrence of cancer, in the A. M. A. Jr., Vol. 81, No. 13. In this article it is shown that practically all the varieties of cancer that occur in man have also been demonstrated in mice. It is further established that the tendency to develop cancer or the capacity to resist cancer, is influenced by heredity.

Live Stock Poisoning

By Professor L. H. Pammel, Ames, Iowa.

SOME SUPPOSED POISONOUS PLANTS FOR MANITOBA

Dr. S. J. Gibson of Hartney, Manitoba, sends a number of specimens and the following letter:

"In the package are some weeds and plants which owner suspects of being poisonous to his horses, as he has now lost two or three and each time they have developed sickness and died after running or grazing in this small pasture where these plants are found. Would you be good enough to inform me whether there are any plants in this package that are of poisonous nature to horses?"

Reply: I have identified the specimens sent to me to be as follows: No. 1 is Daisy Fleabane (Erigeron sp.); No. 2 is Wild Four O'Clock (Oxybaphus hirsutus), Marsh Smartweed (Polygonum Hartwrightii), Yellow Aster (Chrysopsis villosa), White Aster (Aster commutatus); No. 6 Prostrate Spurge (Euphorbia maculata); No. 7 contains two specimens, one of the perennial ragweed (Ambrosia psilostachya) and the Russian Pigweed (Axyris amaranthoides). The prostrate spurge is known to be poisonous, the milky juice containing acrid principles. The toxic substance is unknown, but the plant behaves like Snow on the Mountain which is a related plant.

I have several times had complaints about the small ragweed being poisonous and this related to the perennial ragweed sent to me. The plants are more or less bitter, but if poisonous at all, it cannot be a very violent poison.

It finally simmers down to the Russian pigweed, a member of the Goosefoot family (Chenopodiaceae). This weed was introduced into Canada in 1886 with the Russian thistle to which it is related. It is also related to the Mexican tea and wormwood (Chenopodium ambrosioides). This wormwood is known to be poisonous, but the Russian pigweed has none of these properties, so far as I know. Several members of the family like Greasewood 'cause bloating and the leaves of the sugar beet to which it is related produces renal calculi. Now, many of the plants are rich in calcium oxalate. It may be that the oxalate in some way is broken up. I am sorry nothing more definite can be said in this case.

IS FOXTAIL SMUT POISONOUS?

Am enclosing you a few heads of smutty fox tail. Would like to hear from you as to whether this is dangerous to stock or not. We have lost a few horses from time to time in the county and we thought possibly that this might be the cause of some of the trouble.—Iowa.

Reply: I have frequently received inquiries whether the yellow foxtail smut (Ustilago neglecta) is injurious to live stock. The specimens sent by Mr. Fritzsche are typical of the parasitic fungus on the yellow foxtail. It is an extremely common fungus in Iowa and the Mississippi Valley. Chemical analysis shows that the smut contains a very small amount of ergotin. Not enough however to cause abortion as many people think. Like corn smut is highly nitrogenous and when eaten alone might cause certain digestive disorders but when consumed with carbohydrate food is not injurious.

IS FRINGED LOOSESTRIFE (STEIRONEMA CILIATUM) POISONOUS?

I am mailing under separate cover for identification a plant growing along a pasture fence. It has a yellow flower and hard seed ball. The cow has been eating this in last few days as the pasture is short. It has also eaten sweet clover. The cow appears normal, no fever, appetite good but has nearly dried up on milk in last two or three days. Milk also shows signs of garget, but udders show no inflammation.—New York.

Reply: This plant is a member of the true primrose family. It has yellow flowers and grows in low meadows along fence rows. The plant is related to the true cowslip (Primula vulgaris) and to the (Primula obconica) of our greenhouses. The latter plant is poisonous to the touch. Poor man's weather plant (Anagallis arvensis) which is native in parts of North America is listed as a poisonous plant on the Pacific coast, said to cause the death of horses. However no suspicion has ever attached to the fringed loosestrife. So far as I know it is not proven to be injurious.

Military Section

History of the Veterinary Service of the Army

By Captain George A. Koon, V. C., U. S. A., Associate Editor

AS a prelude to discussing the military policy of the United States and the relationship and duties of the veterinary profession in connection therewith, and for the purpose of an understanding of the status of the veterinary service in the regular army, it is believed a little history is essential.

THE FARRIER
(1796)

On May 30, 1796, by act of congress, farriers were provided in companies of dragoons. Later a farrier-major was provided for each regiment of mounted troops whose duty was to superintend the farriers. From the records it would appear that the "Chief farrier" was a regimental non-commissioned officer in the old dragoon regiments, and when these regiments were converted into Cavalry regiments in 1861, the grade of Chief farrier was still carried.

THE VETERINARY SERGEANT
(1861)

The act of July 29, 1861, creating a new cavalry regiment in the army, provided for one "veterinary sergeant," who was rated as a regimental non-commissioned officer. At this time, then, the cavalry regiments formed from the old dragoon regiments carried a chief farrier, while the newly organized cavalry regiment carried a "veterinary sergeant." The cavalry regiments of the civil war were evidently organized under the Act of July 29, 1861, as they carried "veterinary sergeants." On the roster of Pennsylvania regiments which participated in the battle of Gettysburg, July 1, 2, 3, 1863, there are several regiments of cavalry and it is noticed on the beautiful memorial erected on this field of battle by the State of Pennsylvania, in commemoration of its soldiers who there lost their lives, that the grade of "veterinary sergeant" existed in all the cavalry regiments.

THE VETERINARY SURGEON
(1863)

The first mention of the term "veterinary surgeon" in acts of congress relative to the army is in the act of March 3, 1863, abolishing the grade of "chief farrier" in regiments of cavalry and substituting the title of veterinary surgeon. He was given $75 a month with the (relative) rank of regimental sergeant major. A decision dated March 23, 1864, that he was not entitled to rations evidently placed him outside of the enlisted personnel of the army, inasmuch as every enlisted man was entitled to a ration. The act of March 3, 1863, produced a uniform title in all of the cavalry regiments of the regular army, but, as evidenced by the inscription on the monument at Gettysburg, the old term sergeant still existed in the volunteer regiments in July, 1863.

Following the civil war the army was reorganized and the act of July 28, 1866, created four new regiments of cavalry, two of which were to have colored enlisted men. These four regiments (7th, 8th, 9th and 10th Cavalry) were each allowed an additional veterinary surgeon who received $100 a month. The veterinary service in these new regiments, therefore, cost the army $175 a month, while the veterinary service in the old regiments cost but $75 a month, although the allowance was the same for all.

A few years later the duties of these veterinary surgeons were given in an order which directed that they should visit the stables of their regiments at least once daily and advise the proper officer regarding the treatment of sick or injured animals and that they should instruct the farriers and horseshoers.

Status that of a Civilian

At this time a decision was rendered giving veterinary surgeons the allowance of quarters, fuel, and light of a sergeant-major. They did

not wear a uniform, as their status was more that of a civilian than a soldier. Their position was very much like that of a veternarian having a contract for the treatment of horses of a large business concern. They were appointed by the secretary of war on the recommendation of the colonel of the regiment and could be removed in the same manner. They could resign at any time. No examinations were required for the appointments, and in some regiments the positions were filled by appointing troop farriers.

Quartermaster Department Employed Civilians

No mention is made of veterinary service in other mounted branches of the service in the early history of the army. It is known, however, that the quartermaster department hired civilian veterinarians. These men were paid $100 a month.

Social Status Varied

The social status of the regimental veterinarians varied with the regiment and with the individual and in the same regiment with different colonels. In some regiments the veterinarian was treated as a civilian gentleman and as a member of a profession and was able to do a very fair grade of work and gave considerable instruction to both officers and enlisted men in classes in hippology and horseshoeing. In other regiments the opposite position regarding veterinarians was taken and he was largely interested in drawing his salary and engaging in civil practice.

THE ARMY VETERINARIAN (1901)

Such was the condition of veterinary affairs in the army until after the Spanish war. The many and varied veterinary problems presenting themselves to army officers especially in the military occupation of Cuba and the Philippines drew their attention to the lack of a proper veterinary organization in the army and in the Act of February 2, 1901, the profession received a slight recognition when "Army Veterinarians" were promoted from the relative rank of sergeant-major to that of the "pay and allowances" of a 2nd Lieutenant, mounted, subject to a professional examination, two veterinarians being allowed to each regiment of cavalry and one to each battalion of artillery. By a subsequent act (March 3, 1911 the law relating to retirement of officers was extended to apply to veterinarians.

Wore No Shoulder Straps

Veterinarians remained in this status for fifteen years. They were not commissioned officers yet had all their allowances and privileges, save promotion. They wore the service uniform, and dress uniform minus shoulder straps. They wore the insignia of the army with which they served, cross sabers for cavalry and cross cannons for artillery, with the bottom of a horse's foot between spread wings occupying the lower triangle formed by the intersection of the device. This position was only attainable by an examination, all men in the service having been examined prior to promotion as result of the Act of February 2, 1901, and those appointed from civil life were required to be graduates of recognized veterinary schools and were appointed after undergoing a competitive examination.

Warrant Issued in Lieu of a Commission

Upon appointment these regimental men were given what may be termed a warrant, signed by the secretary of war and the adjutant general. The wording of this warrant was similar to that of a commission. Army regulations showing rank and precedence of officers, numbering lieutenant general as 1, ranked veterinarians as 10, just below second lieutenant and above cadet (military academy). In the army register their names were included in the roster of officers of the regiment to which assigned. Decisions by the comptroller general and by the attorney general classed them as "officers". They had a distinct military status.

Army Regulations Prescribe Duties for First Time

The duties of veterinarians were prescribed in army regulations as follows:

"It shall be the duty of the veterinarian to visit at least daily all sick or injured animals at his station, and to recommend such treatment as he may deem proper. He will have access to the stables at all times. Upon request he will attend such authorized private horses of mounted officers as may need his services.

"The veterinarian will instruct company horseshoers and company farriers in the proper care of the horse. In this he will give especial importance to the anatomy and pathology of the foot, showing the nature and uses of all its parts, illustrating the subject by dissections and specimens. He will also teach the principles and practice of horseshoeing. For the

purpose indicated he will make such visits of instruction to companies of the regiment not at his station as may be deemed necessary by the regimental commander.

"Wherever four or more troops of cavalry or three or more batteries of field artillery are stationed, a suitable building may be set apart as a veterinary hospital."

Made No Reports Nor Records

The regimental veterinarians were an integral part of the regiment and dependent upon the regimental commander for every opportunity to rise above mediocrity. Those of the quartermaster department were civilians and on a contract basis. There was no organized veterinary service and the work of the veterinarians was individual, disconnected and incoordinate. There were no reports to be made —no records of any kind were maintained. These men were horse doctors employed to treat sick animals. The paralysis of initiative, the resultant physical and professional inertia, the loss of ambition and sometimes of self respect, the absence of official and social standing, so often observed, were direct results of the system and were apparent in the type of veterinarian which the system turned out. The strength of the chain was judged by its weakest link. The undeniable fact that some men of outstanding character managed to rise above these deplorable conditions is a credit to the individual who survived in spite of rather than because of a faulty system.

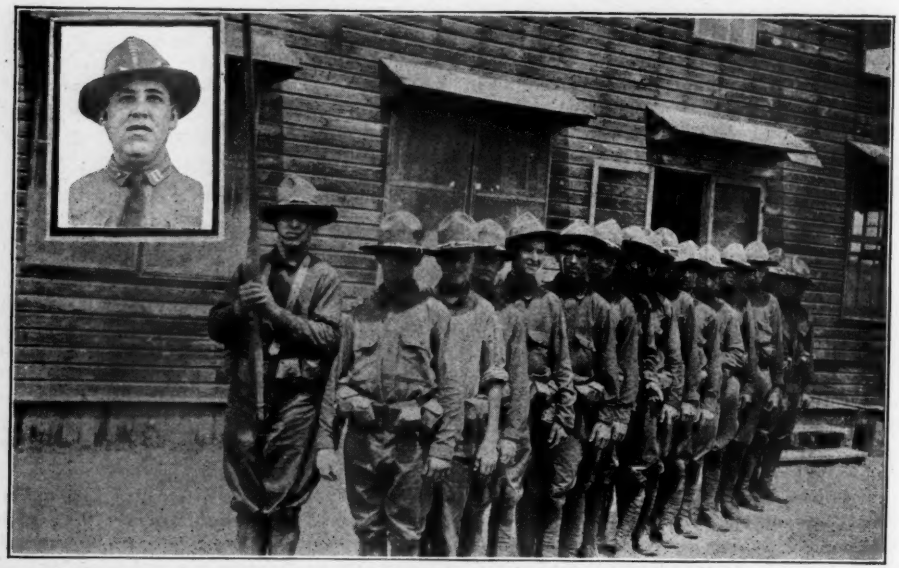
Situation Deplored by Civilian Colleagues

The army veterinary service was a by-word with the civilian profession, whose intelligent members felt keenly the plight of their brethren in the service, but beyond spasmodic efforts on the part of a few of the more progressive to improve this status, the profession had no sympathy or interest in the army.

The quartermaster department continued to hire veterinarians as needed, paying them $100 a month. This department had a grade known as "inspector of animals" and appointed three veterinarians to this position. About 1908, veterinarians employed by the quartermaster were required to take the U. S. Civil Service examination.

Law of 1916 Comes to the Rescue

Such was the status of the veterinary service when the so-called national defense act of June 3, 1916, became a law. This act established the veterinary corps as a part of the medical department, consisting of the veterinarians from the cavalry and artillery regiments and quartermaster department, with rank from 2nd lieutenant to major.



Captain Lloyd Friedline (insert) of Jonesboro, Indiana, with a detachment of the 113th Veterinary Company, Indiana National Guard, at Camp Knox during summer training. The captain organized and commands the company, which we believe is the first veterinary company organized under the existing laws.

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But, Provided No Enlisted Personnel

This legislation was very friendly to the veterinary profession but was of small value to the service owing to the fact that no veterinary enlisted personnel was provided and the veterinarian continued to be a supplicant to line organizations for enlisted assistants in his hospital and in his professional work in the stables of mounted units. Provision was made for veterinary service for cavalry, artillery and mounted engineer units as well as for the quartermaster's department in the inspection of public animals at the time of purchase and for the proper inspection of meat and milk.

War Opened Without Veterinary Organization

While the act of June 3, 1916, provided for 118 veterinary officers, there were but 58 in the army when the United States declared war against the Imperial German Empire, April 6, 1917, and no veterinary enlisted men. There was no organization whatever as veterinary officers had just received their commissions and were still upon the same duties—one might say status—as when the national defense act became a law.

A major of the veterinary corps was ordered to duty in the office of the surgeon general during the spring of 1917 to look after the veterinary service. The almost superhuman task of organizing a veterinary service in time of war when it had to be expanded from 58 officers and no enlisted men to 2,000 officers and 20,000 enlisted men, presented itself.

President Authorized to Act

The act of May 18, 1917, authorized the President to extend the military service during the war. Under this authority General Orders No. 130 were issued which provided a veterinary corps of commissioned officers and enlisted personnel for the army. The officers of this corps included those from the regular army, the veterinary officers' reserve corps, and the national guard and national army. The order provided one veterinary officer and sixteen enlisted men for every 400 public animals, the commissioned personnel to consist of the following grades and ratios for each 100 officers: 7 majors, 20 captains, 36 first lieutenants, and 37 second lieutenants. Later the judge advocate general ruled that the maximum rank could be raised to that of colonel. The grades of sergeant first class, sergeant, corporal, farrier, cook, teamster, saddler, privates first class, and privates were provided for the enlisted personnel.

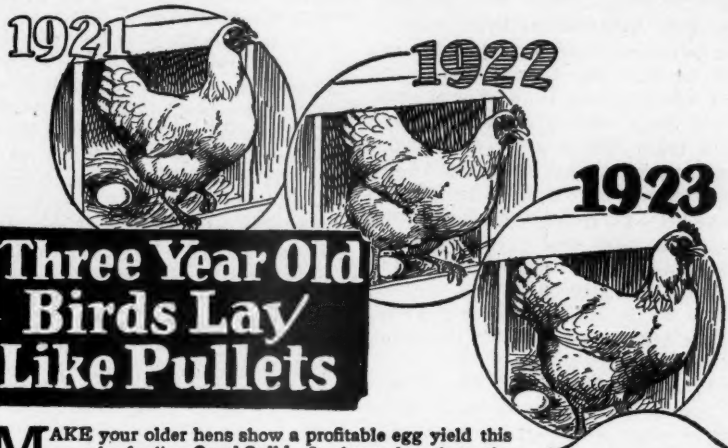
Called for Civilian Veterinarians

The surgeon general called upon civilian veterinarians for help in organizing the veterinary service, as did all other branches of the army, and the profession responded splendidly, giving its most experienced and valuable men to the nation's service.

A number of civilian veterinarians, all of them familiar with veterinary administrative work, together with veterinary officers on duty in the office of the surgeon general began to work upon an organization of the proposed veterinary corps, and their recommendations resulted in the issuance of General Orders No. 130, and on December 15, 1917, Special Regulations No. 70, governing the army veterinary service, were issued. This publication may be said to be the keystone of the veterinary service for it gave the corps for the first time specific instructions as to its duties. "The objects of the veterinary corps," it stated, "are to protect the health and preserve the efficiency of the animals of the army. These objects are to be attained by. (a) Preventing the introduction or extension of communicable disease, (b) Reducing losses from illness or injury by the prompt application of proper treatment (c) Relieving the mobile organizations in the zone of the advance of the sick or injured animals which might impede their movements, (d) Treating in hospitals on lines of communication the animals which can be restored to a serviceable condition. The veterinary corps will also provide for the inspection of meat-producing animals before and after slaughter and of dressed carcasses; and for the inspection of dairy herds supplying milk to the army."

The Above History Pertinent

While the above history of the veterinary service in the army is but sketchy in character, it is written in the belief that all veterinarians connected with the military service should have this knowledge, and with the view of putting facts in their possession which will help them to understand what factors worked to prevent the adoption of Special Regulations No. 70 in the American expeditionary forces until nearly a year after they were published, and also to understand the up-hill fight veterinarians have had in the army, and still have to an extent in our efforts to convince the general staff of the necessity for a well organ-



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Best results are obtained by feeding **Semi-Solid** Buttermilk just as it comes in the package. No other animal protein is required when laying hens are fed **Semi-Solid** at rate of 5 lbs. for every 100 head. Containers vary from one gallon cans to 500 lb. barrels.

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We now have 700 March hatched layers, 1922 hatch. When we got the first barrel of **Semi-Solid,** the birds looked tough, but two weeks after they jumped from 240 to 440 eggs per day and looked like a flock of young pullets again.

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This and other advertisements of Semi-Solid Buttermilk appearing in farm and breed papers convince farmers everywhere of the value of Semi-Solid. They make it easy for veterinarians to recommend Semi-Solid for ailing herds and flocks and their advice is gladly accepted.

ized veterinary service in connection with its plans for the national defense.

Authority Given Veterinarians Reluctantly

The principal advisers to the commander in chief of the American expeditionary forces in France were officers whose knowledge of veterinarians and army veterinary service was gained in the years 1900 to 1916. It is easy to understand, therefore, their disinclination to put Special Regulations No. 70 into effect. Veterinarians had never had any responsibilities or authority, they knew nothing about army organization and these staff officers could see no reason why, overnight as it were, veterinarians should be clothed with authority even to care for the animals—to run their own job. Hence the deplorable condition of the veterinary service until a chief veterinarian, under the chief surgeon, A. E. F., was appointed with instructions to organize the service according to the provisions of Special Regulations No. 70.

Despite the experience of those days, and the marked success of the veterinary service after the provisions of Special Regulations No. 70 became operative, in our efforts to prepare tables of organization, equipment, etc., covering the veterinary service for the six-army study being prepared for national defense, the conception of the veterinary service gained before 1916 still persists in the minds of some senior staff officers. No less an authority than the General Service Schools, Fort Leavenworth, Kansas, in its publication entitled "Map Problems, Part II, 1920" from The School of the Line in its Organization of the Theater of Operations, par. 36, page 15, states, "The evacuation of wounded animals is supervised by the Remount Service * * * ".

Did Not Understand "Evacuation Idea"

In 1917 in addition to the task of convincing those in authority in the A. E. F. as to the necessity of getting veterinary hospitals away from remount depots and organizing the veterinary service and allowing it to function as outlined in Special Regulations 70, the vast majority of civilian veterinarians who entered the service, those with mobile organizations at least, had to revise their ideas of a proper army veterinary service. They all wanted to treat animals. They did not seem to assimilate the idea of the necessity for evacuation to relieve units at the earliest possible moment of the incubus of inefficient horses. The lack of replacements retarded this activity, as well as the fact this was a new idea to line officers. In their experience veterinarians had treated animals in organizations; where did this evacuation idea come from?

Now, as then, we have the task of convincing the staff that our idea of a veterinary service paralleling that of the medical service in its problems of sanitation and preventive medicine, the control of preventable diseases, the professional care of the sick and the operation of hospitals is essentially correct, and securing their approval to our plan of organization.

This plan of organization will shortly be published and each veterinary officer of the reserve corps, as well as National Guard, will receive a copy. Then we have the job of instructing those officers in the essentials at least of the veterinary service, and it is hoped much can be accomplished in this Military Section of Veterinary Medicine.

THE HORSE IN WAR

General Pershing has said that during the recent war an American cavalry division could have been thrown in to good advantage had such a unit been available.

In the Boer war 42,000 trained English veterans were forced to retreat to their great humiliation, before an onslaught of 7,000 mounted Boers who had had little or no military training.

The capture of Jerusalem by the British army during the recent war would have been an impossibility without the cavalry arm, it is admitted by all military experts.

Cavalry successfully covered the retreat of the Italian army on the Piave and saved its valuable stores, artillery and munitions.

Despite the high development of motor transportation, it is remarkable that during the recent war more horses were used in proportion to the men engaged than during any previous major war of history.

The horse is not only indispensable to an army, but the army best supplied with them and best qualified to care for them properly is most likely to win.

The horse in war furnishes a more dependable transportation than motors under all conditions and is indispensible when terrain conditions are bad.

Veterinary reserve officers should report changes of address to the adjutant general, and to the surgeon general, just the same as veterinary officers of the regular army. Officers in charge of reserves complain that this duty is being neglected by many reservists.

"An officer is, from his position, a leader of men. He must show in himself such qualities as he desires to bring out in those under his leadership."—Lt. Dow, U. S. N.

The above being the whole truth relative to the first qualifications of any leader, suggest to all veterinarians the individual advantage of joining the officers' reserve corp and thus acquire higher accomplishments in leadership, lack of which is responsible for most all failures. Whether dean, teacher, official, or practitioner training in leadership will serve a useful purpose.

In view of the developments of chemical warfare it would seem advisable to devise an effective gas mask for horses. Masks were issued for horses during the recent war but they proved to be worthless because the intake did not admit a sufficient volume of air for horses at work.

Dr. Clarence V. Williams, deputy state veterinarian, located at Sheridan, Wyoming, is a captain of the veterinary corps and regimental veterinarian of the 115th cavalry, Wyoming National Guard.

One of the first things taught a soldier is how to care for himself, and subsequent articles will be written with an idea of teaching the reserve officer, with no experience whatever, just what to do from the time he receives his commission until he can be pronounced a trained, well-balanced officer of the veterinary reserve corps.

DISCHARGES

1st. Lt. Wm. H. Lynch, Vet-ORC. honorably discharged per Adjutant General's letter dated Sept. 24, 1923.

Please turn to Page 1073

Dr. J. F. Shigley has accepted the position of assistant professor of veterinary science in school of agriculture of the Pennsylvania State College and not in the veterinary department of the University of Pennsylvania as previously reported.

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Miscellaneous Section

Swamp Fever *

By Wm. L. Gates, Clarksdale, Mississippi

There have been quite a number of names applied to this disease, such as malarial fever, typhoid fever in horses, infectious aenemia and pernicious aenemia. But of all the titles under which this ailment has been classed I think that especially on account of the location of infected territory we might do well to continue to call it just plain old swamp fever. Swamp fever is more prevalent in low lands but may be found in the hill sections of the country. According to some writers this disease has been found in wet seasons at an altitude as high as 7500 feet.

Losses Enormous

In the delta lands of Mississippi, Arkansas and Louisiana I believe the loss from this disease based on the death rate of live stock, is only surpassed by one other disease, namely, Anthrax. The loss to the farmers and stock owners is not confined alone to those animals which die, but to the countless numbers of work stock which are rendered unfit for servive during an entire crop season. The writer of this paper can recall many instances where at least three-fourths of the farm animals on plantations in the Mississippi delta were absolutely useless at the most critical period of the crop season on account of swamp fever.

The Cause a Filterable Virus

It has been conclusively proven that swamp fever is produced by a filterable organism which is transmissible to horses and mules by subcutaneous injection of blood serum. The virus which is present in the blood may be transmitted to a number of equines in a series of inoculations by injecting either the whole blood or the blood serum which has been passed through a fine Pasteur filter. This virus has been found to be active in a carcass several hours after death. The period of incubation after inoculation is from ten to forty-five days.

Occurs in Acute and Chronic Forms

Swamp fever may be classed as acute and chronic. In the acute cases the animals may be apparently in good health but become suddenly paralyzed as in forage poisoning. These cases will show a slight rise in temperature usually ranging from 101 to 103 or they may show a subnormal temperature. In these cases death usually results in from twelve to forty-eight hours.

The chronic cases are characterized by a progressive, pernicious aenemia, remittent fever and gradual emaciation in spite of a voracious appetite. The animal will show a dull appearance and manifest a general weakness, tiring very easily at work. The temperature may range from 102 to as high as 105. We must not be governed by the temperature as the fever will be intermittent or irregular. The animal may show considerable rise in temperature in the afternoon with no fever in the morning, or there may be no fever for two or three days. Toward the end of the disease if the attack is fatal the temperature remains high. Venous regurgation is almost always present. There is a peculiar pulse commonly known as a sliding pulse which is soft and irregular, but may be fast, running as high as 70. Ecchy Moses may be seen on the mucous membranes of the eye while paleness of the visible mucous membranes of the mouth and nose are in evidence. There is very often noticed a large soft swelling on the belly and sheath which, if punctured, will discharge a thin straw-colored fluid.

Carcass Shows Emaciation

After death the carcass is found to be very much emaciated and aenemic and the visible mucous membranes very pale. Subcutaneous edema and hemorrhages are frequently observed. The predominating and most constant lesion is the small hemorrhagic spots on the serous membranes of the heart and on the spleen, liver and lungs. There is generally hypertrophy of the heart. There is generally a serous exudate in the thoracic cavity and in the heart sac. In case the animal dies from intestinal troubles due to over-feeding and as

*Read at the first annual meeting of the Dixie Veterinary Medical Assn., Oct. 10-11, 1923.

a result of the ravenous appetite there may be found the ordinary lesions seen in the alimentary tract in such cases.

Says Diagnosis Not Difficult

The diagnosis of this disease is not difficult when we once become acquainted with the ordinary symptoms and the postmortem lesions. The postmortem lesions resemble in some respects the lesions as seen in hemorrhagic septicemia in cattle but as swamp fever is confined to equines there should be no trouble in differential diagnosis.

Prognosis Not Favorable

In the acute cases I would say that the prognosis is very unfavorable but in the chronic cases there is no disease with which we have to deal that will respond to treatment more readily than swamp fever and for this reason our prognosis in these cases should be favorable.

Fluids Sodium Cacodylate Effective

In the treatment of swamp fever almost all the drugs in the pharmacopoea have been used with varied degrees of success. Quinine and arsenic gives good results but I have had best results by using sodium cacodylate given intravenously. In using this treatment we need not be afraid of large doses. In cases which show considerable rise in temperature along with the emaciating symptoms prevalent with this disease, if we will give 40 to 120 grains of sodium cacodylate intravenously every 48 hours until about five injections have been made there will be a marked improvement in the condition of the patient.

There is yet a great deal for us to learn in regard to this disease, and it is the opinion of the present writer that if the federal government placed some investigators in the field a great reduction in the losses would result.

WHAT IS "LIQUID FIRE?"

What is the composition of "Liquid Fire" used by some veterinarians and race horse men? It is used for sidebones, ringbones, etc., as a substitute for firing.—Montana.

Reply: "Liquid Fire" is a dangerous preparation in that the application often produces ugly sloughing of the skin and hence blemishes the parts very badly in many instances. It is a strong iodine solution that is treated immediately with a second preparation that causes a violent reaction manifested by smoking. The second preparation is probably a turpentine mixture. We have never had it analyzed but will do so if the querist will supply a sample.

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A highly refined general antiseptic for both internal and external use. The pleasing odor, the perfect, white emulsion in dilution, and its high antiseptic potency assures its continued popularity among practitioners. It is better and in the end cheaper than the common cresylic compounds.

The price is right and the quality guaranteed: 1 Gallon, $3.50; 2 Gallons, $6.50, F. O. B. Chicago; 5 Gallons, $15.00, express prepaid.

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The high medicinal value of Guaialyptus has always been recognized where an intestinal or a respiratory antiseptic is needed.

Think of it also as a standard treatment for CANINE, EQUINE and FELINE DISTEMPER, BRONCHITIS, LARYNGITIS, INFLUENZA, and STRANGLES. ROUP, CHOLERA, and OTHER FOWL SCOURGES.

In "FLU", NECROTIC ENTERITIS, and OTHER INTESTINAL AND RESPIRATORY DISORDERS OF SWINE many veterinarians use it exclusively.

The price is right; the dose is small: 1 Gallon, $5.50, F. O. B. Chicago; 2 Gallons, $10.50 express prepaid; 5 Gallons, $25.00, express prepaid.

DRS. CROWE - FISCHER

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Telephones: Victory 7510 and Victory 8900

CALLS THIS MALIGNANT EDEMA

I was called to a cow last night and found what I diagnosed as malignant edema. The cow had been in pasture on low land. The symptoms were noticed four days before my visit. One teat had become hard and encrusted, and this state gradually spread over the entire udder. All of the teats were purple, the eyes emitted a purulent discharge, and the muzzle encrusted with a scab. The vulva and anus were swollen and oozing an exudate. The temperature was 104° Fahr. and the appetite and milk flow fair. Was my diagnosis correct?—Illinois.

Reply: Your diagnosis was not correct, and while we are not able to make a diagnosis from the above syndrome, there is nothing mentioned therein that points to malignant edema. Malignant edema is a galloping, gas gangrene, spreading from a given focus of infection, which is generally if not always a more or less serious wound. Infection of the muzzle, teats, and pudendum simultaneously rather indicates infection of each of these parts with the same agent, the identification of which would not be possible from the above mentioned history.

TWO BAD CASES OF FOUNDER

I have had two cases of founder on widely separated farms. One of these horses was on pasture and the other was fed on alfalfa and grain, and each one when stricken showed typical symptoms of founder. Both of them went down within twenty-four hours after the first symptoms appeared. The conjunctival mucous membrane showed large ecchymoses much like hemorrhagic areas undergoing necrosis. Both died in forty-eight hours. I would appreciate information on these cases. —Illinois.

Reply: These are undoubtedly cases of acute founder, caused by some virulent agent. Fatal cases of founder, showing ecchymotic areas on the mucous membranes are not uncommon. Founder is sometimes so acute and reflects so severely on the integuments (skin and mucous membranes) that great bunches of tail and mane hairs pull out on amazingly easy traction. If an autopsy had been held, the intestinal tract would have been found in a bad state of irritation.

Such cases are usually fatal, and the few which recover are always left with badly damaged feet and hence worthless.

THE BETZCO IMPROVED WASTE PAIL—$4.00

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THOSE BRAYING JACKS

A client is forced to hold over a dozen, or more, jacks in town and the neighbors are up in arms on account of their incessant braying. He has come to me and asked me to operate, and I had to confess that I would have to get information along those lines as I had never attempted such an operation. I have heard it was the practice to operate on the mules that were used in France, and that the operation is considered a minor one. I have read about in one of the journals but when I attempted to find something about it by going through my files I failed to discover even a mention of such an operation.

I have thought some of removing the lateral ventricles as in a "roaring-operation," as a remedy, but I have no way of knowing if that would prove successful and I can see no excuse for experimenting when I may be able to get first hand information. Therefore, doctor, I am appealing to you, knowing full well that if any one can help me out you can.—Idaho.

Reply: The procedure referred to is that of slitting the skin of the floor of the false nostril with a scissors. One blade goes into the false nostril and the other into the nasal fossa. One snip and the operation is done. Both sides are of course operated upon. Destroying the continuity of the vocal cords is however the better operation. It can be done standing under local anesthesia. When the larynx has been opened the vocal cords, one after the other, are hooked up with a tenaculum and a good-sized chunk of the central part snipped out.

One thing to remember is that the "organ of the voice" is not so easily destroyed, being constituted of nearly all of the respiratory apparatus, a good part of the axial musculature, if not also some of the locomotory muscles. All of the respiratory tube can vibrate when the muscles send a column of air through it. The sum total of these operations may therefore be limited to a mere change in the intonation of the voice, and may not change the braying habit very much. The value of such operations in war is that of reducing the carrying power of the voice. It is doubtful if it would do much towards appeasing the anger of a nearby neighbor.

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A SOUND SUGGESTION

How about devoting a page or two to the goat? An animal capable of yielding 2 to 8 quarts of milk daily, testing 7.5% butterfat ought to have some economic value. The truth is the milk goat has been "overlooked" in the greater portion of the United States, and it's time "nanny" were placed where she rightly belongs. I and others would like to read a series of articles of the milk goat: breeds, production, feeding, handling, ailments, and also sources of supply.—Virginia.

BLINDNESS FROM BLOOD LOSS

A colt bled very copiously from a secondary hemorrhage following castration, and remained very weak from the anemia for some time but recovered in every respect with the exception that he is now stone blind. Is there any connection between the blindness and the operation?—Idaho.

Reply: Visual troubles do sometimes follow hemorrhages. It is particularly liable to supervene repeated exsanguination. The blindness either partial or complete usually appears a week or two after surgical operations in which the blood loss was great, and is most likely to follow two consecutive operations, such as the ablation of two large shoe-boils, a week or two apart. Blood losses of this kind cause atrophy of the optic nerves.

There is therefore quite a close connection between your operation and the blindness of this colt.

PERIOD OF GESTATION IN ELK

A client of mine has purchased an elk that seems to be pregnant, and for fear that I might make a mistake in diagnosing her condition I would be pleased to know how often elk breed and what is the duration of gestation. As the bull runs with this cow all of the time I have no way of knowing when she was bred. I would also like to know whether dentition occurs in the same order as in the domestic ruminants, and also the average life of this animal.—Indiana.

Reply by A. C. Worms, veterinarian, Lincoln Park Zoo, Chicago: The American elk (Cervus canadensis) lives from 15 to 20 years. The bulls live longer than the cows. Running wild, their lives are shorter than when kept under the good hygienic conditions of a zoological garden.

They come in heat in the fall (October and November) and drop the calves in May and

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June. The estral period ends abruptly as soon as they are bred but drags along indefinitely if they are not served, and normally occurs but once a year. Observation however, among the elks of Lincoln Park indicate that this rule does not always apply, as we have elk showing estrum at other times, and one in particular that is actually mymphomanic.

Dentition occurs in the same order as that of the domestic bovidae.

INTERNO

I am sending you a sample of a patent medicine used as an internal remedy for the cure of mange in dogs. The advertisements guarantee that it will cure any case of mange including follicular mange. I would like to know the composition of this remarkable preparation.—Georgia.

Reply: Analysis of this powder shows that it is composed of sulphur and an inert powder. The coloring is alkanet. Although intensive medication with sulphur does help cases of sarcoptic mange, and may even through its alterative effect be helpful in the demodex variety, it is stretching the truth to claim such a mixture is a "guaranteed" cure for anything. The benefits of internal administration of sulphur must not, however, be underestimated.

WHY NOT?

Missouri aspires to become a leading dairy state, according to the boosters of that commonwealth who announce that conditions warrant a greater development of its dairy industry. It already ranks fifth as a Jersey state and has one county with more owners of pure bred Jerseys than any other in the United States. The soil, the climate, and the markets of the big midwest cities are so many advantages which appeal to these ambitions.

It is said and it has been apparently demonstrated that the mule will live longer, endure more hardships, require less attention and feed, and is less subject to digestive disorders than the horse. It is equally true that the mule is the most eccentric animal encountered on farms. Williams has said of the mule that "To treat consistently a conglomeration of stubbornness and willingness, temper and sullenness, contentment and restlessness, slyness and docility, faithfulness and waywardness, with no knowledge of which virtue and vice is going to assert itself next, is a problem which may well tax the qualities of the best horseman."

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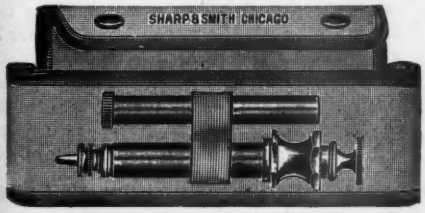

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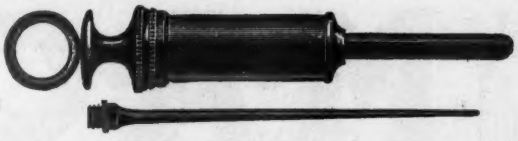

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MARKET STEERS DIE OF INDIGESTION

The loss of slaughter cattle at public markets, due to indigestion induced by improper handling and feeding, is common and practically all such losses could be avoided if the shipper would properly feed and water the cattle and not depend upon excessive fill when they arrive at the market.

Excessive Fill the Cause

Questionable methods and means causing excessive fill was a frequent practice years ago. A shipment of 110 three year old steers weighing 1310 lbs., was observed in which there were 6 deaths enroute and 2 others died after the steers had been delivered at the stock yards. It was found that the steers in question had been on full feed, the concentrates consisting of corn and cottonseed meal. The evening before the steers were loaded, they were given 1520 pounds of cottonseed meal or 12 pounds each. The reason for such a large feed of cake was apparently to increase thirst so the steers would take an excessive fill when they reached the market. This gorging with cottonseed cake resulted in digestive disturbance and death as above indicated. The loss on this shipment was approximately $3,000 and would have been entirely avoided if the steers had been fed a partial ration prior to loading instead of the 12 pounds of cottonseed cake.

Loses Five Out of Seventy-six Head

Recently another shipment of seventy-six, 1260 pound, three-year-old steers was observed in which two steers were dead in the cars when they arrived at the market, one was down and died soon after unloading, and two others died afterward in the pens, making a total of 5 steers out of 76. On investigation it was found that these steers had been fed their regular ration consisting of 8 bushels of corn and 450 pounds of cottonseed cake on Saturday night. They were then driven a short distance, loaded and were enroute from 10 o'clock Sunday morning until 5 o'clock Monday morning. The symptoms evidenced in the affected steers consisted of bloat, marked distress, slight rise of temperature, profuse diarrhoea, the discharge having a very bad odor.

Rumen Found Gorged Post Mortem

On post mortem of those dead, the rumen was found to be gorged with corn, cottonseed meal and hay, and the entire content was in an active stage of fermentation. The cause of death in the last lot of steers was apparently indigestion induced by too large a quantity of feed prior to loading and shipping.

The value of the losses of the second shipment mentioned due to the loss of five steers and the depreciation of the other 71, would probably be in excess of $2,000. Such losses could be avoided or at least reduced to a minimum if shippers would give a limited ration for 24 hours prior to shipping and not attempt to obtain an excessive fill at markets.

It is evident that sheep are coming back. There was a material decrease in the number of sheep after about 1906. During the last two or three years the high prices paid for lambs and the constant high price for wood has been a stimulus for increased breeding of sheep. Although tariff may be a factor, it probably was not as important as the increased demand for mutton and wool. Every farmer could well afford to maintain a small flock of sheep.

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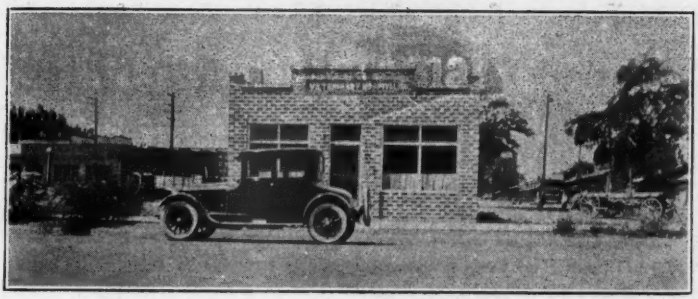

This is the Hospital of Dr. Peter McIntosh at Yakima, Washington. Peter was a trusted interne of the McKillip Veterinary College hospital at Chicago before venturing into the great Northwest, where, as the illustration proves, he is again making good.

A prominent veterinarian in the corn belt keeps a stock bottle of the following vermifuge for swine in his pharmacy: Chloroform, eight ounces; oil of chenopodium, eight ounces; and castor oil, sufficient to make a gallon. The dose is from one-half to two ounces.

Will the application of kerosene to the skin of pregnant sows produce abortion? Some abortions have been reported in pregnant sows in herds that had been sprayed with kerosene. A few cases have been reported in which pregnant sows had access to oilers containing kerosene.

Dr. M. K. Jacobs, Richmond, Missouri, vaccinated a Shetland pony against rabies after it had been bitten by a mad dog. As the patient is a trained pony of priceless value, the owner insisted upon the immunization treatment despite the cost, which under ordinary circumstances is too high for equines.

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Law for the Veterinarian

Right of Veterinary Surgeon to Charge for His Services Upon the Basis of His Professional Standing

Leslie Childs

GENERALLY speaking, a veterinary surgeon, in the absence of a contract or custom of his own to the contrary, is entitled to compensation for professional services rendered in accord with the charges usually made by other veterinarians of a like professional standing. And in rating himself, in relation to others of his profession, the veterinary surgeon, it seems, has the right to claim standing in the class to which, in his opinion, he properly belongs.

However, in the event the charges made are disputed as being too high, the question of their reasonableness will then usually be brought into issue. This, as a general rule, will be a question of fact, and a judgment of a trial court, in a situation of this kind, will rarely be disturbed even though the charges approved may seemingly be high for the services rendered. In other words, an appellate court will not, in the absence of clear error, disturb a judgment on the question of the reasonableness of a veterinary surgeon's charges for professional services rendered.

The reasoning followed by what appears to be the weight of authority in situations of this kind is admirably illustrated in Marshall vs. Bahnsen, 1 Ga. App. 485. The facts and circumstances which culminated in the action being, as gathered from the report, substantially as follows.

Dr. Bahnsen, a veterinary surgeon engaged in the practice of his profession, was employed to make an "examination for soundness" of fifty-four head of mules. The examination of the mules necessitated traveling a distance of some thirty miles, though less than a day's time was consumed in completing the examination. For the services rendered Dr. Bahnsen charged at the rate of five dollars per head, in all the sum of $270.

Charge for Services Contested

This charge was contested as being unreasonable, and the sum of twenty-five dollars was tendered as settlement in full. Dr. Bahnsen declined to accept the amount offered and instituted the instant action to enforce payment for the full amount of his claim.

Upon the trial of the cause, which was before a jury, the question of the reasonableness of this charge, in the light of all the circumstances, was the principal issue. Dr. Bahnsen insisted that the charge was proper and usual, while the other side contended it was excessive.

In support of Dr. Bahnsen's contention it was in evidence that he was very expert in this line of work, and that he was capable of making an examination and passing an intelligent opinion with great rapidity, and that five dollars per head was the usual charge for such services as had been rendered. It was also brought out by the testimony of Dr. Anderson, another veterinary surgeon, that Dr. Bahnsen was "a competent surgeon, and that his opinion would be all right to rely on."

On the other hand there was evidence that the charge of $270, for the examination of fifty-four head of mules, was excessive. And in support of this, evidence was offered to show that Dr. Bahnsen had previously charged another customer a smaller sum for services, while not identical, yet which had required practically the same amount of his time to render. This evidence, however, was rejected by the trial court as not being proper proof of the reasonableness of the charges for the services being sued for.

The trial judge submitted the case to the jury, under proper instructions, and the latter found in favor of Dr. Bahnsen for the full amount claimed. The other side thereafter carried the case to the higher court on appeal contending, among other things, that the trial judge erred in refusing to permit evidence of the former charges made by Dr. Bahnsen, and further that there was error in permitting Dr. Anderson to testify as to the professional standing of Dr. Bahnsen. In passing upon these contentions in the order of their statement the higher court, in part, said:

"Exception is taken to the refusal of the court to allow the defendant to prove that he (Dr. Bahnsen), had charged another customer a smaller sum for services, which, though not identical in character with those sued for, consumed practically the same amount of time. The true question in such cases, where there is no express contract, is, what is the ordinary and reasonable charge made for such services by members of similar standing in the same

Dr. J. H. Copenhaver, Pres. Dr. J. S. Koen, Sec.

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profession; but the reasonableness of the charge can not be established by showing what the plaintiff charged another person in a similar case * * *

"Objection is also made that the court allowed Dr. Anderson, another veterinary surgeon, to testify that he considered Dr. Bahnsen a competent surgeon, and that his opinion would be all right to rely on. 'A physician or surgeon suing for the value of professional services may show that his standing in the profession is high.' 9 Enc. Ev. 829. * * *

What the Court Decided

The higher court then directed its attention to the sufficiency of the verdict of the jury, and the judgment of the trial court, on the question of the reasonableness of the charges. In this connection, through the medium of Judge Powell the law was—with a dash of humor rarely met with in judicial opinions—clearly stated as follows:

"Of course, we have no jurisdiction to set aside the finding of a jury, approved by the trial judge, on a question so peculiarly within their province as that of the value of professional services. $270 does seem to be a right heavy charge for a few hours work by what the folks colloquially call a 'horse doctor'; and what is styled with greater gentility a 'veterinary surgeon'; but the law very wisely considers that juries know, very much better than judges, especially appellate judges, do, what is a reasonable and just pay not only for a 'horse doctor,' but also for all other classes of professional men. In such matters their finding, when approved by the trial judge, is final, and not reviewable upon the facts. * * *"

In conclusion the appellate court affirmed the judgment rendered in the lower court in favor of Dr. Bahnsen for the amount of his claim. Holding, as outlined in the opinion, that the verdict of the jury, approved by the trial judge, was final on this question of fact relative to the reasonableness of the charge.

The above Georgia decision appears to be one of the clearest the books contain upon the point under discussion, involving the reasonableness of charges made by a veterinary surgeon. And, in the light of the facts, evidence of record, and conclusion of the court, it becomes a decision of great value for every veterinary surgeon. For while it does not announce any hard and fast rules, yet its reasoning and holding may well serve as a friendly guide to any veterinary surgeon, who should unfortunately become involved in a dispute over the reasonableness of his charges.

Signs of the Times in Veterinary Medicine

THIS is the 26th annual meeting of the Minnesota State Veterinary Medical Association. I wish to express to you my sincere thanks and appreciation of the great honor you have bestowed upon me, for it is indeed an honor to be elected president of one of the largest and most progressive associations of its kind in this country. The founders and builders of this society are to be congratulated, for they prepared and built a foundation that has permitted of a steady and progressive increase in growth, without danger of falling or disintegration.

Cites Changes in Veterinary Medicine

During the existence of this association, many changes have occurred in the evolution of veterinary medicine. The young practitioner of a quarter of a century ago, was equipped mainly for administering the sick animal, and while he may have had visions of preventive medicine, such was far from being realized, while today the veterinary profession is rapidly wending its way into the field of preventive medicine.

The cloak of mysticism is being cast aside and the owner and breeder of livestock is no longer being kept in ignorance, but is being taught more and more about his animals both in health and in disease, and to appreciate and recognize the importance of good and efficient veterinary service.

In the twenty-six years that this society has existed, numerous and various noted achievements have been accomplished. The discovery and perfection of antihog-cholera serum by Dorset, Niles and McBryde completely revolutionized the treatment of hog cholera, and while it has not enabled us to eradicate this common extremely infectious and formerly highly fatal disease, it has been of untold value in the control of this malady. Glanders which was once a much dreaded and frequent disease, has not only been controlled, but in many states practically eradicated, through the use of the mallein test, and the enforcement of rigid sanitary laws and regulations.

Foot-and-Mouth Disease Eradicated

The much dreaded foot-and-mouth disease has gained a temporary foothold in the United States upon several different occasions, but in each instance rapid and efficient veterinary service has succeeded in the eradication of the disease. The fact that foot-and-mouth disease has been prevented from becoming a permanent infection is a real triumph for the veterinarians of North America. Tick fever is gradually and steadily succumbing to the efforts of the veterinarian, so that the livestock industry of the south is now making rapid strides in the development of good livestock. Mange or scabies which a few years ago was a serious menace to the livestock interests of the range countries, has been so efficiently dealt with that the disease has been successfully controlled, and much territory has been rendered free of this infestation. Much credit for the control of the diseases already mentioned, must be given to the U. S. bureau of animal industry, whose tireless efforts both from a research and scientific and police control standpoint, have made it possible to secure such wonderful results. The bureau of animal industry organized for the purpose of investigation, control and suppression of animal diseases in co-operation with state livestock officials, practitioners of veterinary medicine and breeders of livestock, is one of the outstanding achievements of the veterinary profession.

Sanitary Board Brought Fame to the Profession

The Minnesota state livestock sanitary board which was organized in 1903, has brought great fame to the veterinarians of Minnesota. The organization of this board is well known to many of you, but I wish to say to the younger members of this society, that its purpose of organization was primarily for the control and eradication of animal diseases, but it provided for co-operation between the breeder of livestock and the veterinarian. Without the support and aid of the livestock interests, the Minnesota state livestock sanitary board would have failed in its purpose.

The organization of this board which has a very enviable reputation is a monumental achievement, and much credit is due the men who perfected the organization and to those who have guided its destinies and aided in the performances of its functions. The U. S. government did the first accredited tuberculin testing, but Minnesota was the first state to do this work with requirements that approached severity. Minnesota was the first state to officially adopt the mallein test for the control of glanders.

Turned from Horse to Other Species

It has only been a short time since the practitioner depended upon the equine for the bulk of his practice. True, considerable attention was

Allocution delivered by President W. L. Boyd at the 26th annual meeting of the Minnesota Veterinary Medical Association, Minneapolis, Jan. 10, 1923.

given to cattle and swine, but in the last named, treatment was confined to herds and seldom if ever to individuals. Sheep practice was of less importance and with a few exceptions, no thought or time was being given to the diseases of poultry. It would be superfluous and unnecessary for me to attempt to tell you what has happened to the practice of equine surgery and medicine. Cattle therapy has made rapid advancement and today it is in many sections of our country, being given more time and study than any other form of veterinary practice.

The interest in cattle practice has been largely brought about through the slump in horse practice together with the advancement in the breeding of purebred cattle and rapid increase in the value of these animals. Swine practice also has developed rapidly until it now occupies a very important part of the veterinarians' activities.

Sheep and Poultry Practice Now a Reality

Sheep practice has been increasing due to the revival and the increased interests in the sheep breeding industry, and poultry practice which was at one time considered as more or less of a joke, and by some even despised, is gradually but surely receiving more and more consideration by our profession. In the field of materia medica and therapeutics, biological therapy has occupied the limelight, although glandular therapy is not to be overlooked. Biological therapy which is based upon fundamental principles related to immunity, has been developed largely in the past fifteen or twenty years. This has been brought about through the extensive scientific investigations of infectious diseases.

Biologics Now Household Terms

Vaccines, bacterins and serums are now household terms and many of them have proved so reliable and efficacious as diagnostic, preventive and curative agents, that great advancement in the control and eradication of disease has been made possible. Every veterinarian's equipment contains certain bacterins, vaccines, and sera, some more than others. Those agents which have proved to be unreliable and they are not few in number, have or are being cast aside and forgotten. With the great wave of biological therapy, came great expectations, and not only practitioners but investigators believe that this would supplant all other forms of treatment, and be the means by which we would solve the many perplexing problems of the various animal scourges. Today biological therapy is not enjoying the same wave of popularity, but it is occupying a very important niche in the realm of veterinary therapeutics.

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Glandular Therapy Gains Prominence

As a result of thorough extensive investigations, glandular therapy has also gained wide prominence, and today it too fills a very important place in the field of veterinary medicine. The subject of endocrinology is a rich one, and offers almost a virgin soil for further researches, with the prospects of finding and developing new materials which will be of great value to those engaged in the study and treatment of diseases of man and lower animals.

Vitamins and Minerals a Center of Attraction

Vitamins and minerals for the prevention and treatment of avitaminosis and deficiency diseases are now the center of attraction in the various fields of chemistry, medicine, and animal production. The subjects of vitamins and minerals offer a very large and attractive field for investigation, and though many interesting and helpful agents have been discovered and carefully described, this field has as yet only been scarified, and many new facts will be gradually brought forth as the investigations are continued.

Bovine Abortion Attracting Attention

Research work in animal diseases is at the present writing, being confined mainly to the diseases of cattle, swine and poultry. Almost every state experiment station including the experiment station of the U. S. government and the Rockefeller institute and similar institutions interested in the research of animal diseases, are working with bovine infectious abortion. While progress in solving many of the perplexing problems connected with this infection has been slow, yet during the past few years much new and interesting data has been forth coming.

Disease of the New Born Vigorously Investigated

Investigations in the diseases of the new born animal are being vigorously pursued and much headway is being made. In connection with this subject, one can mention with considerable pride the work done upon the subject of disturbances of the thyroid gland. It has been definitely determined that the feeding of iodin to pregnant animals during the first stages of gestation, will prevent such conditions as "hairless pigs," goitre in lambs and calves.

These findings are of wonderful value to the livestock breeder, because many of our losses from disease occur in the very young animal. The relation of the soil to animal disease offers a rich and almost untouched ground for investigation and many problems in this connection are being investigated. Hog cholera, hog flu, deficiency diseases, and diseases of the new born pig are problems that are being dealt with by the various research workers throughout the country.

Tuberculosis the Big Problem

But the most stupendous problem that is now confronting the American veterinarian is the project of eradication of bovine tuberculosis. This subject is not only of interest to the veterinarian, but to the scientist in the various fields of medicine and of public health, and to the breeders of cattle and swine, and to all those who are interested in the health of man and in the improvement and health of our nation's livestock.

The organization and methods of attack for the eradication of this disease are well known to you all. The task of eradicating tuberculosis from our herds upon the first glance and thought, seems to be insurmountable, and though the accredited herd plan was not begun in a definite organized way until 1917, no one can deny that great progress has been made. The educational feature alone, not only to the people in general, but to the veterinarian also, has been of considerable worth. Minnesota is one of the leading states in this work. The health of her cattle is well known throughout our country, and this fact is greatly appreciated by the owners and breeders, as it is of great importance in attracting prospective buyers.

Practitioner a Cog in the Wheel

The private practitioner who in certain instances felt that the plan was one of encroachment and complained of the plan or manner used for determining eligibility for testing accredited herds, now finds the plan admirably suited for his welfare, for now the accredited herds and even herds in the process of accreditation are being turned over to him. In other words the practitioner is an important cog in the main wheel of this great organization.

Sees No Over-Supply of Veterinarians

It has been stated that there is at the present time, an over-supply of veterinarians. If this be true it will only be of short duration. The number of men now graduating from our various colleges is much smaller than was the case a few years ago, and then too, these institutions have not experienced the marked increase in matriculation that has resulted in almost every other college since the war. This year we understand there has been a uniform but very small increase in matriculation, but the classes are yet top heavy. Then there are men leaving the profession for other fields of endeavor, those who are forced to retire because of old age, with these who are removed by the grim reaper. These are some of the chief reasons why the over-supply of veterinarians will in my opinion only be of short duration.

Practice Decreased with Business Depression

The field of veterinary medicine has not been very bright or alluring during the past two years; all of us have recognized the depression, some more keenly than others. Some have grown discouraged, sold or quit their practice or position and turned their interests into entirely new channels of welfare. There has been a depression in veterinary medicine because there has been a depression in our national basic industry, agriculture. Because of the low prices the farmer has received for his livestock and various commodities, there has resulted less and less demand for the services of the veterinarian. With the gradual increase in prices of our agricultural products, then and only then will conditions improve in veterinary medicine, and this is true of all other phases of business. That conditions are improving in the livestock industry are reflected in the recent sales of beef cattle sold at the International Livestock Show which has just passed.

Price of Stock Going Up

Dairy cattle are bringing better prices and are in greater demand than a year ago. There is more interest in swine, for prices of breeding animals are more encouraging. There is a revival of the sheep-raising industry, and now with increased prices on wool, this industry will rapidly gain in importance, and poultry raising which is at present rather an important industry on the farm, is furnishing a new field for the practitioner.

Agriculture Nets 30% More Than Last Year

Within the past few weeks, the twin cities were favored with a visit from Roger W. Babson, the noted business statistician, whose prophecies are closely followed in the business world. According to Mr. Babson, conditions are steadily improving, although it may require two or three years more to bring about complete readjustment. Mr. Babson bases his belief that the condition of the farmer has improved on the opinion that the majority of farmers will net thirty per cent more for their products this year than they did a year ago, because production expenses have been decreased. Let us take courage from these words and develop more optimism among our ranks as the road to better times now seems much shorter.

Must Work for Closer Contact with the Stockman

In the campaign for better livestock that is being conducted throughout the nation, we as veterinarians should co-operate in every possible way and do everything in our power to help this movement along, for with better livestock, then more rapidly will our profession grow and suc-

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ceed. Let us instill into the animal husbandmen the spirit of confidence, and good will. Let him know and realize that we are not only interested in the welfare of his flocks and herds from a monetary standpoint, but that we appreciate and greatly admire good livestock and are glad to help the owner in anyway that we can to aid him in success. We must work for a closer contact and better understanding between the livestock man and the veterinarian. Such a condition will prove beneficial to both. Very few intelligent farmers who appreciate good veterinary service, wish to attempt to perform any act of veterinary service, or to employ the services of the untrained or unskilled mind.

In closing, let me urge the continuance of the practice of good fellowship, close co-operation and genuine friendliness, be staunch supporters of both our local and national associations, and we will be certain to progress. I thank you.

PRESIDENT'S ADDRESS, CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION

By Dr. L. J. Tyler, Huntington Park, California

The President's address, as such, is somewhat of a novelty in this Association as very few past Presidents have availed themselves of the privilege, or assumed the duty of officially presenting such a document for your consideration. However, I think that an annual address by the President is imminently fitting and proper, and that it should review important problems and indicate policies for future advancement.

Various questions pertaining to the interests of the profession in this state have arisen during the past year and decisions were made for the best interests of the profession as a whole by your president and his executive committee. Errors may have been made but not intentionally.

The future of the profession in this state is bright for those who are fortunate enough to be well located. All through the trying period of reconstruction, California has been the one white spot on the country's map. The large influx of population and capital here have had their effect on business in general and ours has benefited accordingly. Dairying has increased immensely and cattle practice has kept pace. The laboring man has been busy and well paid, thus giving him the wherewithall to treat his pets when ailing, and even horse practice has increased and breeding has been revived to a slight degree and in some sections hog and goat practice is good. But our comparative prosperity has been exaggerated and while, as I before stated, the prospects are bright for those well located, it has been disappointing to many from other parts of the U. S. who have come to California in the hopes of benefiting by conditions here.

Southern California Over-Crowded

From my knowledge gained as secretary of the State Board of Examiners and from other investigations made, I am convinced that there are over 1,000 veterinarians in this state who are in other lines of business than the practice of veterinary medicine. California, while a large state, is a state of valleys which alone are tillable and a large part of the state is not fit for agricultural purposes, so that at the present time California has all the veterinary practitioners she can use, and Southern California more than she needs.

A limited number can be assimulated each year as new territory is opened up and brought under cultivation making large animal practice better, and also as our urban population increases small animal practice will also increase. But I wish to make myself clear on the point that California is no El Dorado as far as veterinary practice is concerned, which idea seems to prevail all through the east, judging from the large amount of correspondence coming into my hands as secretary of the State Board.

Lauds University Short Course

In reviewing the events of the past year our minds naturally turn to what might be termed achievements and among them two things stand out prominently, viz. the putting on of our successful short course and the initiating and passing of our Practice Act. The law passed but the Governor failed to sign same. We, however, have a good law in force for our protection, the one which failed being an amend-

"....a large factor in maintaining her wonderfully even production and her splendid, healthy condition"

"GROFF'S CONSTANCE, the mature Jersey champion," writes U. G. Groff, of Amherst, Mass., "was fed yeast three times a day during her whole test period—365 days. It was no doubt a large factor in maintaining her wonderfully even production and her splendid, healthy condition. She finished 200 pounds heavier than when she commenced."

"....won first in every show in which she was entered"

"THE Guernsey heifer, Betty of Belmont, owned by the Belmont Farm, at Perrysburg, Ohio, has been under my care for over one year," writes Reuben Hilty, veterinarian, of Toledo, Ohio. "My attention was first called to her during the summer of 1922. Her condition was not good, the hair coat was dull, and she lacked the flesh desired for one going into the show ring. They lacked a junior yearling for their show herd. I prescribed yeast for this heifer, and in three weeks she was added to their show herd, and from that time on to the end of the season won first in every show in which she was entered."

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For free booklet and prices to veterinarians and dealers, write to The Fleischmann Company's branch office in any of the following cities: New York, Brooklyn, Chicago, San Francisco, Seattle, Hartford, Conn., Portland, Me., Buffalo, Albany, Philadelphia, Pittsburgh, Baltimore, Boston, Birmingham, Cincinnati, Cleveland, Columbus, O., Dallas, St. Louis, Detroit, St. Paul, Newark, N. J., Toronto, Montreal, Havana, and San Juan.

Fleischmann's Pure Dry Yeast comes in 2½ lb. cans, delivery prepaid. It keeps indefinitely. Each can contains enough yeast to ferment 1,000 lbs. of feed.

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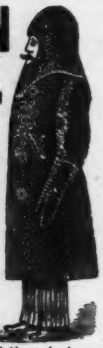

Horse or Cow hide, Calf or other skins **with hair or fur on,** and make them into coats (for men and women), robes, rugs or gloves when so ordered; or we can make your hides into Oak Tanned **Harness or Slaughter Sole or Belt Leather; your calfskins into Shoe Leather.** Colors, Gun Metal, Mahogany, Russet or lighter shade. Calfskins tanned in the lighter shades of shoe leather, also make **elegant stand and table covers;** great for birthday, wedding and holiday gifts.

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freshen, repair and reshape them if needed. Furs are very light weight, therefore it will **cost but little** to send them in to us by Parcel Post and get **our estimate of cost;** then we will hold them aside awaiting your decision. If you say **"go ahead,"** very well; we will do so and hold them free of storage until you want them. If you say **"no,"** we will return them post-paid.

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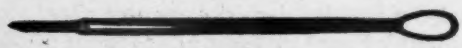

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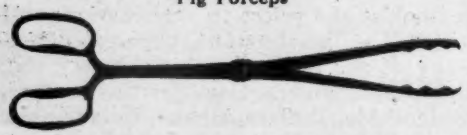
Pig Forceps



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ment to it. Both stand as a monument to the loyalty and untiring efforts of the profession in this state. Great credit is due the veterinary department of the State College of Agriculture, but the fact remains that their efforts would have been in vain if not supported by goodly attendance of the profession at large.

Members Travel Great Distances

When a state the size of California with its veterinary profession so widely scattered, many traveling 500 miles, can gather together over 25% of its numbers for an educational gathering it speaks volumes in support of thee progressiveness of its personnel. The initiating and passing of our Practice Act may be viewed in the same light showing the unison of purpose and lack of internal discord so often exhibited in presenting such measures. Our annual meetings are also a source of great pleasure and profit and are yearly supported by a greater attendance and interest, and each year sets a new high mark to be excelled by the following (a circumstance we have never yet failed to accomplish).

Read the Journals, All of Them

I would especially suggest the reading of good literature pertaining to our profession. There are at the present time three good veterinary journals published in this country and they should be in the hands of every practitioner in the state. I would not discount the so-called trade journals issued by the various commercial houses and they also should be read, but the man who pins his faith to them alone is very apt to develop a one-track mind with the hypo needle pointing the way. Also, to the mind of the writer some of the statements made are so extravagant as to arouse the suspicions of the man who is inclined to do some of his own thinking. Not for one moment would I decry the work of these interests but would sound a warning against the swinging of the pendulum to any extremes, and in this connection I would make a special plea for a revival of the study of Materia Medica and Pharmacy.

Study Materia Medica and Pharmacy

One of the greatest leaks I find in many practitioners' business is in the buying of too many high priced pharmaceuticals to the exclusion of home prepared remedies. Study Materia Medica and Pharmacy and curtail this leak. Also our colleges seem to be in a conspiracy to produce immunologists at the expense of pracitioners.

This would be ideal if they could prevent all disease, but unfortunately this condition will never prevail and when the practitioner faces the problem of a departure from normal already established, he is too often at sea. Grabs some preparation already at hand with instructions printed on the bottle stating it is good for this and that and thus becomes the next thing to a patent medicine vendor. Personal study and application by the individual, exercising his ability to think and reason things out for himself, is after all one of the basic principles upon which our progress must depend.

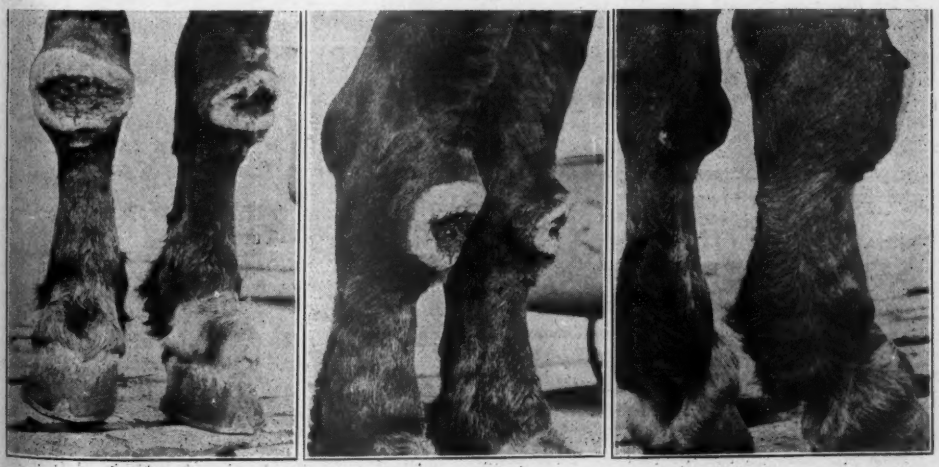
Support the Associations

Another suggestion for professional betterment is the enroling of the individual in the various associations. The size of this state precludes the frequent meeting together of the profession as a whole, but this condition has been met and the problem solved in the formation of district associations, of which there are five, all doing splendid work in their respective districts. I would urge every eligible man to apply for membership in his nearest local association and follow this up by enrolling in his state association and the A. V. M. A., the latter being the largest veterinary association in the world.

I cannot enforce the statements made above in a better way than to quote a conversation with a young graduate whom I had known for years. On meeting him at an association meeting, the first after his graduation, I remarked that he was starting his professional career in a proper manner by being at the meeting. He replied that he had determined upon that course before graduating, being influenced by the fact that he had noticed that the best and busiest men were always at the association meetings and he reasoned that if they could sacrifice their time and money for such purposes, he certainly could—which is true, the best and busiest men are always found at an association meeting.

Many other suggestions might be made for professional betterment, but lest I weary you I will bring this address to a close, suffice to say enough has been suggested, which if practiced will surely bring results. Only one thing more and I close. The keynote of success in an association such as ours, if it would achieve its highest ideals, is cooperation, the elimination of internal dissentions, and an honest effort to so trim our sails as to make the Port of Highest Efficiency and Service:

THREE VIEWS OF A BAD CASE OF KELLOID GROWTHS IN A VALUABLE STALLION



The above figures illustrate a case of "sallenders" in a pure bred Shire stallion belonging to Truman's Pioneer Stud Farm, Bushnell, Illinois. The growths had the physiognomy of kelloids and the ablation of one of them together with the behavior of the surgical wound seemed to confirm the diagnosis.

News Section

GEORGIA ASSOCIATION HOLDS BANNER MEETING

The seventeenth annual meeting of the Georgia State veterinary association, held in Savannah on September 19 and 20, 1923, was perhaps one of the most enjoyable occasions in the history of the Association. In response to an invitation, quite a number of the members brought their ladies with them.

The meeting was opened by addresses of welcome on behalf of both the City of Savannah and the Savannah board of trade by the Honorable W. G. Sutlive, editor of the Savannah Press, and a state representative who complimented the veterinary profession upon the work that it is doing toward the preservation of human life through the prevention and control of diseases in live stock, opened the gates of the City of Savannah, and extended us a most cordial welcome. The address of welcome was responsed to in a short, but well delivered talk, Dr. E. D. King, Jr., city milk and meat inspector of Valdosta.

President Gives Sound Advice

In the presidential address, Dr. A. G. G. Richardson, dean of the veterinary division, University of Georgia, featured a review of changes which have taken place in the past two decades. Quoting statistics, he pointed out that, although the loss in equine practice has been marked, the opening up of new avenues of professional revenue have more than offset the loss in equine practice. He urged the veterinarian to take active part in the program of "Agricultural Diversification," which, when well balanced, must include a progressive and profitable animal industry.

Urged Enlistment in Reserve Corps

The paper on "Veterinary Officers' Reserve Corp, Army of the United States," by Dr. Henry A. Jasme of Savannah, was well received, and heartily endorsed by Dr. E. D. King Jr., who led the discussion. Drs. Jasme and King brought out the point that the enlistment in the Reserve Corps would not only benefit the veterinarian from the military training standpoint, but, in the event of hostilities, a Reserve Officer would be rapidly advanced to the higher ranks of his division, instead of having to enlist as a private, as was the case in many instances during the late war.

Dr. W. A. Scott of Columbus, presented the subject of "Differential Diagnosis between Parturient Eclampsia in the Bitch, and Strychnin Poisoning," in which he showed that all cases which present symptoms of spasm should be carefully studied as to history, and especially in regards to recent parturition. The paper brought out a good discussion by the practitioners present.

Federal Activities Help Practice

Dr. W. E. White of Tifton, read a paper on the "Effect of State and Federal Disease Control Work on the Practitioner." In his paper he showed that were it not for the initiative taken by the state and federal governments, in the putting on of campaigns for the control of diseases and the enforcement of certain control measures, by the governments, that the control and eradication of contagious diseases would not have developed. In other words, if the general public had to wait until control measures were promulgated by the practitioner there would be but little contagious disease control work being done. On the other hand, he pointed out that very little could have been done, if those in authority had not had the co-operation of the general practitioner. This paper was creditably discussed by Dr. J. E. Severin of Athens.

Brings out Question of Tolerance to Tuberculin

Dr. A. L. Hirleman, U. S. Inspector in charge of Tuberculosis Eradication Work in Georgia, next gave a chart talk on "Experiences in the Eradication of Tuberculosis in a Badly Infected Herd." It was shown that herds of cattle may acquire a tolerance to one method of testing, and that once acquired it is sometimes impossible to entirely rid the herd of tuberculosis by one method of testing, and that by the triple combination test, all cattle do not react to all three tests. Some will react to all three, some to two tests of the combination, and some to one test only. Nine head in this particular herd reacted to the ophthal-

mic test only, and, upon post-mortem, well marked tuberculous lesions were found.

Advises Careful Swine Vaccination

In the paper, "Some experiences in the Use of Hog Cholera Serum and Virus," Dr. Harry Trumbo, veterinary inspector in the hog-cholera control work in Georgia, gave some interesting experiences in this work, and reviewed the use of serum in the immunization against against cholera, almost from its inception to the present time. He brought out the point that good results in the use of serum and virus not only depend upon potent serum and virulent virus, but upon the care exercised by the operator in performing the work in diagnosis and in the proper handling of the herds thereafter.

Judging the "Used" Cow

The next paper. "When is a 'Used Cow' a Safe Buy?", by Dr. John W. Casey, assistant state veterinarian, McRae, Georgia, precipitated a lengthy discussion upon the question of the veterinarian qualifying himself as a good judge of cattle. Discussion by Dr. P. F. Bahnsen, stressed the importance of the veterinarian being able to pass upon the merits of cows as to value, as well as to health. The second day was featured by an excursion down the historic Savannah into the open sea, and a picnic, in every respect, an enjoyable occasion, in which the ladies participated for the first time.

Dr. J. M. Sutton, Sylvester, was chosen president for the coming year, with Dr. J. E. Severin, Athens, vice-president. Dr. Peter F. Bahnsen, Americus, was re-elected secretary-treasurer.

Columbus and Atlanta contested for the next meeting place, Columbus winning by a large majority. Drs. W. A. Scott and B. N. Lauderdale of that city, were instructed to have everything primed for the meeting next year.

Peter F. Bahnsen, Secretary.

NEW YORK CITY ASSOCIATION

(October 3rd, 1923)

The literary program was as follows:

Dr. George W. Little read a paper on "Indications for Cecectomy Operation upon the Dog;" Dr. E. B. Ackerman on the "Police Dog;" and Dr. George H. Berns on the "Veterinarian and the Status of the Veterinarian of New York and Brooklyn fifty years ago."

Dr. Little's paper was a carefully prepared

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one and should be of much general interest to the small animal practitioner. It will soon be published.

Dr. Ackerman should be complimented for his effort in characterizing the police dog. Not being a student of foreign literature, his good paper was of necessity an original and a very practical description of the police dog as we know him in America.

Dr. George Berns' paper was both instructive and entertaining. He is probably as well acquainted as any man in America with the different early characters of the profession in our country.

With his literary ability and humor to portray them he produces not only a literary classic but such a fund of information that the article will serve as a vade-mecum for coming generations. This paper will also be published.—J. F. DeVine.

Dr. John H. Phillips has been appointed city veterinarian of Houston, Texas. His duty is that of meat inspector and veterinarian for different city departments including the zoological gardens. A liberal salary has been fixed for this office by the city council.

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SOUTHEASTERN STATES VETERINARY MEDICAL ASSOCIATION

November 12-13, 1923

Greensboro, North Carolina

Program

Address of Welcome—Mr. C. W. Roberts, Secretary Greensboro Chamber Commerce, Greensboro, North Carolina.

Response to Address of Welcome—Dr. A. L. Hirleman, B. A. I. Inspector in Charge Georgia, Atlanta, Georgia.

President's Address—Dr. M. Jacobs, Dean Veterinary Division U. of Tenn., Knoxville, Tennessee.

Report of Secretary-Treasurer—Dr. Jno I. Handley, Atlanta, Georgia.

Address—Dr. Jno. R. Mohler, Chief B. A. I., Washington, D. C.

Unusual Cases in General Practice—Dr. R. H. Parker, Gastonia, North Carolina.

The Relation of The Veterinarian to Breeding Problems and Breeding Efficiency—Dr. Cassius Way, N. Y.

Address—Dr. C. A. Cary, Dean Veterinary College, Ala. Poly. Inst., Auburn, Alabama.

The Treatment of "Black Tongue" in Dogs—Dr. W. D. Staples, Anniston, Alabama.

Indications and Uses of Acri-Flavine Solutions—Dr. F. E. Kitchen, Greenville, South Carolina.

Address—Dr. C. H. Stange, Dean Iowa State Veterinary College, Ames, Iowa; now President of the American Veterinary Medical Association.

Disease Prevention—Dr. T. E. Munce, State Veterinarian, Harrisburg, Penn.

Rabies Vaccination—Dr. J. E. Severin, Veterinary Surgery University of Georgia, Athens, Ga.

Some Phases of Small Animal Practice—Dr. W. J. Lentz, Director Small Animal Clinic, U. of Penn., Philadelphia, Penn.

"Fright Disease" in Dogs—Dr. J. T. Dixon, Rock Hill, South Carolina.

Some Legal Phases of Veterinary Practice—Dr. Wm. H. Moore, State Veterinarian, Raleigh, North Carolina.

Current Education of the Practitioner—Dr. W. K. Lewis, State Veterinarian, Columbia, South Carolina.

The Practitioner Versus B. A. I. and Politicians—Dr. F. W. Morgan, Chattanooga, Tenn.

Diagnosis and Treatment of Intestional Parasites of the Dog—Dr. J. G. Phelps, Montgomery, Alabama.

PRONOUNCED THE GREATEST OF DAIRY SHOWS

The annual National Dairy Show held this year at Syracuse, New York, October 5-13, is reported to have been the most stupendous exhibition of dairying and related arts ever given. The exhibit of the federal department of agriculture was a great show in itself, displaying the progress of the dairy industry from its primitive state to that of the present day, in regard to animals, equipment, machinery and management.

ANNOUNCEMENTS

The Arkansas Veterinary Examining Board will hold examinations at Little Rock November 30 for all applicants who wish to procure a license to practice in that state. The personnel of the board consists of Dr. Hubert Shull, Texarkana; Dr. Joe H. Bux, Little Rock; and Dr. W. F. Miller, Stuttgart.

The winter meeting of the Oklahoma State Veterinary Medical Association will be held at the Huckins Hotel, Oklahoma City, January 16-17, 1924. Dr. L. B. Barber, secretary.

The Maine Veterinary Medical Association held its usual quarterly meeting at Augusta, October 10. Papers by A. J. Neal, W. H. Corey, R. B. Stanhope, E. B. Beals and Professor Corbet of the state university are announced by Secretary Baird.

THE NEBRASKA ANNUAL

The annual meeting of the Nebraska Veterinary Medical Association will be held this year at Grand Island. The dates set for the meeting reported by Secretary Woodring are December 11 and 12. Nebraska meetings of recent years have been outstanding events and the selection of a central location assures a large attendance. The officers of 1923 are: D. W. Hurst, president; Elmer Watkins, vice-president; F. R. Woodring, secretary-treasurer; and C. J. Norden, chairman of the executive committee. The other members of the executive committee are Drs. J. S. Anderson, P. L. Cady, W. T. Spencer, and G. A. Young. The attractive program under preparation and the professional questions confronting the practitioners of that state to be discussed, hold out especial inducements for every practitioner to attend.

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Sioux City, Iowa

UNITED STATES LIVE STOCK SANITARY ASSOCIATION

The 27th annual meeting of the United States Live Stock Sanitary Association will be held at the LaSalle Hotel, Chicago, Illinois, December 5-6-7.

SOUTHWESTERN STATES VETERINARY MEDICAL ASSOCIATION

One of the most promising association meetings of the fall months will be held by this association November 12-13 at Greensboro, North Carolina. President Stange of the American Veterinary Medical Association; Dr. John R. Mohler, chief of the United States bureau of animal industry; Dr. T. E. Munce, state veterinarian of Pennsylvania, and Dean C. A. Cary of the veterinary department of the Alabama polytechnic institute are among the contributors announced by Secretary Handley.

ILLINOIS ANNUAL MEETING

The 41st annual meeting of the Illinois State Veterinary Medical Association will be held at the Lexington Hotel, Chicago, December 4-5. Among the contributors to the program are Drs. H. B. Schwarze, R. E. Kluck, E. L. Quitman, N. S. Mayo, Geo. B. McKillip, Geo. B. Frost, J. S. Koen, Glen Brown. J. R. Krichel, S. L. Stewart, and others. The subjects to be discussed are swine diseases, cattle practice, poultry practice, avian tuberculosis, the horse situation, management of small animal hospitals, control measures in operation against contagious disases, and all of the major and minor professional questions of current moment to the practitioners of the state. Among the latter are federal, state, farm bureau, and commercial activities relative to their bearing on veterinary practice.

The program committee is exerting an unusual effort to make the 41st annual meeting of this old association one of exceptional interest and importance.

WANTED

by Imperial Veterinary Medicine Coy, Nailsea, Somerset, England, good buying agents to represent them in sale of well-known meals, medicines, greases, and all classes of veterinary goods to farmers, housekeepers, etc. Liberal commission and discount offered.

Dr. Charles J. Hinkley of Sioux Falls, South Dakota, is suffering from an attack of anthrax contracted while vaccinating cattle incident to control of that disease which has been prevalent in the Northern states during the last few months.

Dr. and Mrs. H. C. Beckman have returned to their home at Humboldt, Iowa, after an extended honeymoon.

Dr. M. H. Rolighed, Indiana veterinary college, '23, has located at Appleton, Wisconsin

Dr. Samuel Glenn, a Cornell graduate, has established a small animal hospital in Pittsburgh, Pennsylvania.

Mr. and Mrs. H. F. Bickford, Dauphin, Manitoba, announce the marriage of their daughter, Jesse Alexander to Dr. Owen McQuirk, September 24.

The partnershp of Faber & Faber, Mitchel, S. D., has been dissolved by mutual agreement. H. P. Faber retains the old stand and his brother G. G. Faber moves to a new address only a block away.

Dr. A. C. Ackerman, until recently an instructor in the St. Joseph Veterinary College, has moved to Wilber, Nebraska to practice. Both Dr. and Mrs. Ackerman are well-known judges of poultry and officiate in that capacity throughout the middle west states.

Dr. I. Rubenfeld, of Hackensack, New Jersey, is keeping alive a feline unclassified monstrosity described as being a double-headed, three-eyed curiosity in good general health. It is one of a litter of three.

In a campaign to curtail the annual budget of the city Mayor Fawcett of Tacoma, Washington, abolished the office of milk and meat inspector to which the princely salary of $1,200 a year was attached, without noticeable opposition, and thus establishes another record of value placed upon human health by the masses in general.

Dr. Geo. N. Russel recently had some experience with an unusual case of hemorrhagic septicemia in a cow.

Mrs. (Dr.) C. Orla Jensen, bacteriologist of the Royal Veterinary College of Denmark was among the foreign official delegates to the World's Dairy Congress held at Washington, D. C. the first two weeks of last month.

Dr. Septimus Sisson, professor of anatomy in the veterinary department of the Ohio State University, attended the annual meeting of the National Veterinary Medical Association of Great Britain at York, England, in August and was elected an honorary member.

"PRETTY SOFT"

Dr. E. C. Goodrich, Lawton, Michigan, once a prominent young veterinary practitioner of the great state of Michigan, stepped from veterinarian to bank president, after turning over his large and growing practice to Dr. D. H. Dickie. He was a veterinary officer during the war and now belongs to the reserves, and is president of the National Bank of Lawton, an ardent dog fancier, and a gentleman farmer, specializing in the potentialities of finances, French bull dogs, and grapes.

Professor Charles Porcher, official delegate of the Republic of France to the annual meeting of the America veterinary medical association, represented his government at the world's dairy congress at Washington, Philadelphia, and Syracuse, and then proceeded west as far as the Pacific coast studying the dairy situation in this country as part of his official duties. Detroit, Chicago, Oconomowoc, Minneapolis, and Seattle were included in the official itinerary.

Dr. George B. McKillip, of Chicago, who has succeeded his father in one of the largest private horse practices ever developed by any one man, says that business is still good, in spite of the numerical depreciation of the horse effectives of that city. The doctor who was commanding officer of Veterinary Hospital No. 6, A. E. F., the largest and best equipped hospital in the advanced section of the army zone, still mantains an up-to-date establishment at the site of the old McKillip Veterinary College.

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FOR SALE—Owing to death, widow wishes to dispose of veterinary equipment; county seat in dairy and farming community. Northeastern Indiana. Address No. 766, VETERINARY MEDICINE, 1827 South Wabash Ave., Chicago, Illinois.

WANTED—A veterinary student or graduate to travel selling veterinary supplies to veterinarians in New England. Part salary, but mostly on a commission basis. Address No. 763, VETERINARY MEDICINE, 1827 South Wabash Ave., Chicago, Illinois.

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Dr. A. M. Henderson is city food inspector for the city of Aurora, Illinois.

DEATHS

David Martin, a registered non-graduate veterinarian at McKeesport, Pa., died October 9, 1923, at the age of 79 years.

Mrs. Catherine McKenna, devoted mother of Dr. J. F. McKenna, popular veterinarian of Fresno, California, died at her home in San Francisco, September 15, after an illness of several weeks.

PROMINENT VETERINARIAN DIES OF RABIES

Dr. Otto Emmett, prominent veterinarian of Glendale, Arizona, and member of the state examining board of that state, died of rabies at his home September 4. He was bitten by a dog while administering treatment for an ailment that was not recognized as rabies at the time. When the nature of the dog's affection became apparent shortly after, the doctor took Pasteur treatment and although getting along well was suddenly stricken and died in a few days. He was 57 years old, a native of Michigan and a resident of Arizona for 12 years. He is survived by his widow and three daughters.

Concluded from page 1013

inflammatory zone. Sectioned, they are found to have thick walls of connective tissue of variable thickness and a simple or anfractuous cavity containing a strongylus curled on itself in a gray or brown pultaceous mass. Most of the worms measure 16 to 18 millimeters, some exceeding 20 millimeters. According to the systematic researches of Strickler, Glage and O. Martin, they originate in the arteries. Some of the nodules are empty and contain a crater through which the worm escaped into the intestines. Others still inhabited show a small opening resembling the prick of a pin. In the environs of the nodule a microscopic examination shows that the musculature has almost entirely disappeared and the submucosa strewn with leucocytes and small round mononuclear cells.

(Excerpt from Recueil de Medecine Veterinaire, July 15, 1923. Professor A. Railliet.)

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Dr. N. Rectenwald of Pittsburgh, Pa., has returned after 55 years of veterinary practice in Pennsylvania. He was city veterinarian of Pittsburgh for 15 years, and for many years was a staunch supporter of local and national association movements.

BIRTHS

Dr. and Mrs. B. E. McCullough of Eagle Grove, Iowa, announce the birth of a daughter.

Phillis Jean, eight and a half pounds is the newest arrival at the home of Dr. and Mrs. L. M. Graham, Rolfe, Iowa.

Dr. and Mrs. W. A. Wilkin, Centralia, Illinois, announce the arrival of a son and heir, weighing 8½ pounds, September 20, 1923.

Dr. and Mrs. L. M. Graham are receiving congratulations on the arrival of a baby girl, 8½ pounds, at their home at Rolfe, Iowa, September 3, 1923.

A new baby girl arrived at the home of Dr. and Mrs. Schaap, Pipestone, Minnesota. Irene Cathérine, is the name, and the weight addition to this happy family is 6½ pounds.

APPOINTMENTS

Dr. M. E. Evans (Cornell '10) has been appointed county veterinarian of Wyoming county, Wyoming, vice Dr. Frank McBride, resigned.

Dr. A. C. Bolle, of Jacksonville, has been appointed county veterinarian of Menard county, Illinois.

Dr. C. E. Fidler, formerly a prominent practitioner at Canton, Illinois, has accepted the appointment of county veterinarian of Kankakee county.

Dr. L. R. Cantwell has been appointed state veterinarian of Nebraska. The office is designated as "Chief of the Bureau of Animal Industry". Dr. F. R. Woodring, secretary of the state association is the assistant chief.

Dr. J. F. Shigley, for five years the chief veterinarian of the Beebe Laboratories of St. Paul, goes to Philadelphia as a member of the teaching staff of the veterinary department of the University of Pennsylvania.

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Military Section

Continued from page 1043

2nd. Lt. Earl A. McCain, Vet-ORC. honorably discharged per Adjutant General's letter dated August 31, 1923.

2nd. Lt. James R. Varley, Vet-ORC. transferred as Captain, Inf-ORC. per 1st Ind., AGO. September 18, 1923.

MUTATIONS

1st. Lt. Howard N. Beeman has been assigned as student at The Cavalry School, Fort Riley, Kansas.

On expiration of leave, 1st. Lieut. Homer Johnson is directed to report for duty at Ft. Bliss, Texas.

1st. Lt. Raymond Randall is directed to proceed on the transport scheduled to sail December 5, 1923, for San Francisco and then to report to the Commanding Officer, Letterman General Hospital for the purpose of carrying on the veterinary laboratory service.

Captain Horace S. Eakins is directed to report to the Commandant, Army Veterinary School, Army Medical Center, Washington, D. C., for duty.

ADDITIONAL RESERVE OFFICERS

Majors

Hopper, John Bogert
Raffensperger, Hayes Benton
Spranklin, John Wm.

Captains

Castleberry, Guy
Fritz, Benjamin Scott
McConnell, Wm. Clarence
Paxton, John Dryden
Rath, Reuben Benj.
Reidy, John Bernard
Rogers, Edgar Merrill, Jr.
Stephens, George

First Lieutenants

Anderson, Horace Leslie
Barnette, Wm. Augustus
Combs, Lawrence Glen
Knoernschild, Herbert Wm.
McFall, Charles Herman
Parker, Elmer Benert

Second Lieutenants

Barta, James Chester
Brown, Philip
Dunn, Lucian Henry
Emery, Frederick Earl
Haigler, Stanwood Wise

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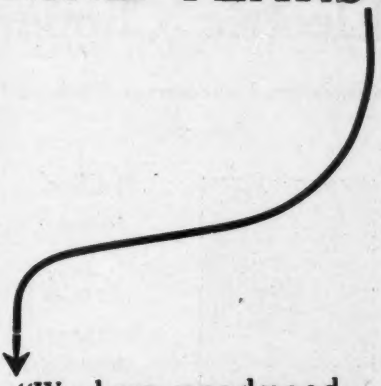
NINE YEARS



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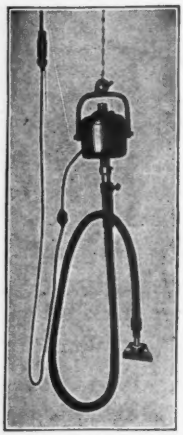

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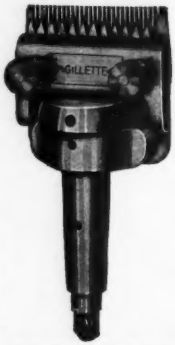

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Military Section

Concluded from page 1073

Lash, Cleo Leslie
Leider, Louis
Leighton, Harry Raymond
Reece, Chester Leroy
Richards, Earl Dean
Riley, John Wm.
Schlotthauer, Carl Frank
Simonsen, Ralph Edgar
Taylor, Rush Urban
Yandell, Donald Albert

Dr. John A. Phillips, a veteran of the veterinary corps of the famous Rainbow division, has been appointed city veterinarian and meat inspector of Houston, Texas by the council of that city.

Dr. M. V. Miles of Charleston, Illinois, has been appointed county veterinarian of Ford county, that state.

Dr. L. C. Smith, Elizabeth, Kentucky, and Dr. G. B. Isbell of Hopkinsville, have formed a partnership to practice at the latter place.

Dr. J. L. Jones, of Blackburn, Mo., took a brief vacation from practice to look after some business interests in Eastern Missouri the latter part of August.

Dr. F. F. Smith, of Kansas City, Kansas, formerly in charge of immunization of swine in the Kansas City Stock Yards, is now engaged in the immunization of stock cattle against hemorrhagic septicemia in the same yards.

Dr. C. L. Nelson, formerly of the Fidelity Supply Co., of Oklahoma City, is now devoting his entire time to poultry work. The doctor is located in Oklahoma City.

Dr. D. C. McClintock, itinerant veterinarian of the Pacific coast, mentioned in the September issue, as a man with a very bad memory relative to money he borrows from his colleagues, is reported to have been arrested by the police of Seattle for passing a worthless check. An instrument house also reports that he has also suffered a lapse of memory in regards to a bill for instruments amounting to more than fifty dollars.

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